

**REMEDIAL ACTION COMPLETION/FINAL  
REPORT FOR THE REMOVAL RESPONSE ACTION  
IMPLEMENTED AT THE NORTH PENN  
AREA 2 SUPERFUND SITE - STEIERT FACILITY**

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## 1.0 INTRODUCTION

On June 3, 2005, Oaktree Industrial Associates (Oaktree) and the United States Environmental Protection Agency (EPA) entered into an Administrative Order by Consent (AOC) for the removal response action at the former Steiert facility. The former Steiert facility is located at 2750 Bergey Road in Hatfield Township, Montgomery County, Pennsylvania (the Site). The former Steiert site consists of approximately 30.75-acres of land and is identified as tax parcel number 35-00-00331-003 and block and unit number 077-017. The property is located within the boundaries of the North Penn Area 2 Superfund Site and is known by EPA as the North Penn Area 2 Superfund Site - Steiert Facility.

The former Steiert site was historically used from about 1937 to 1986 to manufacture metal brushes and industrial brooms. The broom manufacturing operations occupied the northern 20.5-acres of the property, herein after referred to as the Site, with the southern 10.25-acres being unused and undeveloped. As indicated in a June 22, 2005 letter from EPA to Oaktree's environmental legal counsel (Hamburg, Rubin, Mullin, Maxwell & Lupin) remediation of soils was only required on the 20.5-acre northern parcel (the Site), which the Agency referred to as Unit II and no remediation was required on the 10.25-acre southern parcel, which was referred to by EPA as Unit I. A copy of the June 22, 2005 letter from EPA is included in Appendix A.

As discussed in detail in Section 3.0 of this report, EPA initially implemented investigations at the Site in 1987 and 1988 as part of the search for potential source areas for elevated volatile organic compounds (VOCs) detected in the ground water beneath the North Penn Area 2 Superfund Site. Further investigations were completed at the Site in 1998 by EPA and in 2002 by Oaktree's consultant at that time, American Resources Consultants, Inc. (ARC). Through these investigations, the only contaminant identified at the Site and which needed to be addressed through remediation was lead in soils and sediments. Although volatile organic compounds at levels exceeding drinking water standards were detected in the on-Site supply well, which is currently only being used for non-potable purposes, no on-Site sources were identified and the Site was determined not to be a primary source for ground water impacts present in the North Penn Area 2 Superfund Site. Therefore, no further investigation or remediation of the on-Site ground water was required.

Based on the previous investigations completed at the Site, the AOC required, among other things, that Oaktree remediate the lead impacted soils and sediments identified on the former Steiert property. As outlined in the AOC, Oaktree developed and subsequently submitted, and EPA approved, a Revised Removal Action Work Plan (Work Plan) for the Site that was developed by ARC and dated June, 2004, an addendum to the Work Plan prepared by ARC and dated May 6, 2005, and a September 12, 2006 addendum to the Work Plan prepared by Penn Environmental & Remediation, Inc (Penn E&R). The Work Plan and Addendums (Work Plan) outlined the procedures and methodologies that Oaktree followed as part of the implementation of the on-Site remedial activities and the requirements of the AOC.

The required on-Site remediation of the lead impacted soil and sediment has been completed. In all, about 6,700 cubic yards of lead impacted soil and sediment was excavated, stabilized (if required) and then relocated and capped in a berm constructed along the western property line.

The required post-excavation/attainment soil sampling was subsequently implemented in the remediated areas. Based on the results of these sampling activities, all lead impacted soil and sediment has been remediated and remaining soils and sediments outside the footprint of the berm meet the AOC Cleanup Standards established for the Site by EPA for lead in soils of 1,000 milligrams per kilogram (mg/kg) and for lead in sediments of 550 mg/kg. Also, remaining soils and sediments outside the footprint of the berm at the Site meet residential direct contact and soil-to-ground water Medium Specific Concentrations (MSCs) for lead of 500 mg/kg and 450 mg/kg, respectively, which were developed by the Pennsylvania Department of Environmental Protection (PADEP) pursuant to Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2).

The lead impacted soil and sediment excavated at the Site was placed in a berm located along the western property boundary. The berm is about 550 feet long, by 50 feet wide, by about 15 feet high. Once all impacted soil and sediment had been placed in the berm, the berm was capped with at least 2 feet of clean soil. On some areas of the berm, the clean soil cap is up to 5 feet thick. The clean soil was obtained from areas on-Site that were not impacted with lead. Once installed, the clean soil cap covering the berm was mulched and seeded. Since the berm contains lead impacted soil, activity and use limitations for the area encompassed by the berm, as discussed in Section 6.0, will be placed in an Environmental Covenant. Also, an Operations and Maintenance Plan has been developed and is provided in Section 7.0 and will be followed to ensure the integrity of the cap is maintained.

This Remedial Action Completion (RAC) report is being submitted pursuant to the AOC and Work Plan and documents the remedial activities that were implemented and the post-excavation sampling performed to confirm the effectiveness of the remedial activities. Also, this report has been prepared as a Remedial Investigation/Final Report (RI/FR) to satisfy the administrative reporting requirements required pursuant to Act 2 so that Oaktree can pursue an Act 2 release of liability for soils at the Site.

The report is divided into nine sections. Section 1.0 includes this Introduction to the report. Section 2.0 includes a Description of the Site, including its layout and historical use, and the Previous Investigations implemented at the Site and the results of these activities are discussed in Section 3.0. A discussion of the Remedial Activities implemented is included in Section 4.0, and the Post-Excavation/Attainment Soil Sampling implemented at the Site and the results of these activities are presented in Section 5.0. An Institutional Control Plan is presented in Section 6.0 and an Operations and Maintenance Plan is included in Section 7.0. Conclusions are presented in Section 8.0, references cited in the report are listed in Section 9.0, and the required signatures are included in Section 10.0.

## **2.0 SITE DESCRIPTION**

### **2.1 Site Description and Layout**

The former Steiert facility is located at 2750 Bergey Road, just north of the intersection of Bergey and Richmond Roads in Hatfield Township, Montgomery County, Pennsylvania. The property consists of approximately 30.75-acres of land and is identified as tax parcel number 35-00-00331-003 and block and unit number 077-017. The property is located within the boundaries of the North Penn Area 2 Superfund Site and is known by EPA as the North Penn Area 2 Superfund Site - Steiert Facility. The location of the Site is shown on Figure 1.

The property was historically used from about 1937 to 1986 to manufacture metal brushes and industrial brooms. The operations included the use of high-temperature lead furnaces and hydrochloric acid/sodium hydroxide baths for plating operations. Wire for the brushes was manufactured in a steel mini-mill, lead-plated, and then assembled. In July 1986, a fire destroyed the wire bristle manufacturing building, which housed the high-temperature lead furnaces, resulting in the release of unknown quantities of hydrochloric acid, sodium hydroxide and lead.

The broom manufacturing operations occupied the northern 20.5-acres of the property, herein after referred to as the Site, with the southern 10.25-acres being unused and undeveloped. As indicated in a June 22, 2005 letter from EPA (see Appendix A) to Oaktree's environmental legal counsel (Hamburg, Rubin, Mullin, Maxwell & Lupin) remediation of soils was only required on the 20.5-acre northern parcel (the Site), which the Agency referred to as Unit II and no remediation was required on the 10.25-acre southern parcel, which was referred to by EPA as Unit I. A surveyed map of the former Steiert property, including the specific dimensions and layout of the southern (Unit I) and northern (Unit II/the Site) parcels is shown on Figure 2. As part of the overall development of the property, Oaktree plans to subdivide the property into the two parcels (Unit I and Unit II) shown on Figure 2.

During its operation, there were up to eight buildings and four operational ponds located at the Site (Unit II) at the approximate locations shown on Figure 3. The buildings were generally located along the northern third of the Site and the ponds were located in the eastern side of the property at the approximate locations shown on Figure 3. As will be discussed in Section 4.0, the ponds were remediated and then subsequently backfilled. Also, three of the buildings historically located at the Site have been razed and five remain. Of the five remaining buildings (see Figure 3), one is being used by the current property owner, Oaktree, for storage, one is leased to an automobile refinisher, and three are vacant. Oaktree is currently preparing the Site for construction and plans to develop the Site with office/commercial buildings.

## **2.2 Current Use of the Site**

The Site is currently owned by Oaktree. As indicated above, there are five small buildings remaining at the Site. Of these, one is leased to an automobile refinisher, one is used by Oaktree for storage, and the other three are empty and not being used for any purpose. With the exception of some limited earth moving and grading activities being implemented as part of the development of the property, no other activities are currently being implemented at the Site. Oaktree is planning to develop office/commercial buildings at the Site.

## **2.3 Ownership History**

The Site was owned by A. Steiert & Sons, Inc. (Steiert) from 1937 until 2005, when the property was sold to Oaktree, who is the current owner. As indicated above, the Site was used as a manufacturing facility for metal brushes and industrial brooms while owned by Steiert.

## **2.4 Characteristics of Adjacent and Surrounding Properties**

The Site is bordered to the north/northeast and east by a commercial/light industrial park, to the south/southeast by the 10.25-acre southern portion of the former Steiert site (Unit I) beyond which lies Bergey Road, an industrial plant and the off-site portion of the North Penn Area 2 Superfund site, to the west/southwest by Conrail railroad tracks, open agricultural land and commercial use properties, and to the northwest by a Praxair, Inc. plant facility.

## **2.5 Topography and Surface Water Drainage**

The Site is relatively flat with an elevation of approximately 380 feet above mean sea level. The Site terrain slopes gradually to the southeast. Historically, storm water flow was controlled by the four process ponds and a marsh area located at the Site. The storm water that collected in these ponds/marsh area either flowed through a culvert under the railroad line that makes up the western/southwestern property boundary and then to the southeast via off-site drainage swales or drained to the southeast and into an existing pond located along Bergey Road. Water that historically/currently collects in this off-site pond drains to the southeast as well.

As indicated above, the four ponds/marsh area historically located at the Site were backfilled as part of the on-Site remedial activities. As part of the remedial activities and planned development of the Site, a storm water detention basin was installed in the approximate area where Pond 4 was historically located (see Figure 3). Storm water at the Site currently flows into this detention pond, which discharges to the West Branch of the Neshaminy Creek.

Other than the current storm water detention basin and the historical ponds/marsh area that were filled as part of on-Site remedial activities, there are no surface water bodies

located on the Site. The closest surface water body is the West Branch of the Neshaminy Creek, which is located about 3,500 feet to the southeast of the Site.

### 3.0 PREVIOUS INVESTIGATIONS

This Section of the report provides a summary discussion of the results of the previous investigations completed at the Site, which formed the basis for the remedial activities implemented at the property.

#### 3.1 1986 North Penn Water Authority Sampling

As outlined in the Work Plan developed for the Site, the North Penn Water Authority (NPWA) reportedly collected a water sample from the on-Site supply well in 1986. This well is still present at the Site and is located within/near the unoccupied office building located in the north central portion of the Site. Penn E&R did not review any reports developed by the NPWA for this sampling event. However, based on results included in the Work Plan, several volatile organic compounds were detected in the sample obtained from the on-Site supply well. These compounds included trichloroethene at 199 micrograms per liter (ug/l) versus its EPA/PADEP drinking water standard of 5 ug/l; 1,1,1-trichloroethane (TCA) at 168 ug/l versus its EPA/PADEP drinking water standard of 200 ug/l; 1,1-dichloroethene at 8.3 ug/l versus its EPA/PADEP drinking water standard of 7 ug/l; 1,1-dichloroethane at 2.7 ug/l versus its EPA/PADEP drinking water standard of 27 ug/l; and cis-1,2-dichloroethene at 5.8 ug/l versus its EPA/PADEP drinking water standard of 70 ug/l.

In May of 2007, Oaktree collected another sample from the on-Site supply well and had it analyzed for volatile organic compounds by Suburban Water Testing Labs using USEPA Method 524.2. A copy of the laboratory report for the analysis of this sample is included in Appendix B. A review of Appendix B shows that only 1,1-dichloroethene, at a concentration of 15.7 ug/l, was detected in the sample above its EPA/PADEP drinking water standard of 7 ug/l. Although 1,1-dichloroethene was detected above its drinking water standard, the concentration at which it was detected (15.7 ug/l) is well below its PADEP volatilization to indoor air screening level of 160,000 ug/l. Therefore, vapor intrusion is not a pathway of concern that needs to be further evaluated/addressed.

Given these results, ground water beneath the Site appears to be impacted. However, as discussed in the Work Plan, through site investigation activities completed at the Site, as discussed below, EPA did not identify any on-Site primary source areas for this impact or for ground water impacts associated with the off-site portions of the North Penn Area 2 Superfund site.

The on-Site water supply well is only connected to the office building, which is currently vacant. With the exception of the use of the restrooms in the office building, this building is not presently being used for any purpose. Oaktree personnel and the tenant in one of the other on-Site buildings are the only people who have a key to access the office building. The lease with the tenants at the Site indicates that the water from the supply well is potentially impacted and is not to be used for potable purposes. Oaktree personnel have also been made aware that water from the well is not to be used for potable purposes. Signs have been placed over all faucets in the office building that are connected to the water supply well indicating that the water should not be used for potable purposes and all subcontractors who may work at the Site from time to

time are also notified and will continue to be notified that the well is potentially impacted and the water is not to be used for potable purposes.

Oaktree plans to continue to use the well since it supplies water to the restrooms in the office building, which are the only restrooms located on the property. These restrooms will also be required by the on-Site tenants and they will be required during future site development activities. Also, Oaktree plans to use the water during future site development activities, which should be completed by December of 2015. The development to be constructed at the Site will be connected to public water. Therefore, after completion of the development of the Site, the water supply well will be abandoned and properly sealed in accordance with all local, state and federal regulations. The EPA and PADEP have approved the use of the well for non-potable purposes during the development of the Site. However, and as discussed in Section 6.0, the Environmental Covenant requires that the on-site supply well be abandoned after Site development has been completed and that ground water not be used for potable purposes.

### **3.2 1987/1988 Tetrattech NUS Investigation**

During 1987 and 1988, Tetrattech NUS Corporation, under contract to the EPA (EPA's contractor), conducted a site inspection of the property. The reports associated with this site inspection were not reviewed by Penn E&R. However, based on information included in the Work Plan, the results of this inspection revealed high lead levels in several surface soil and pond sediment samples. Some volatile and semi-volatile organic compounds were detected as well; however, these seemed to be at relatively low levels. A sample from the on-Site supply well was also collected and results of the analysis of this sample showed elevated levels of volatile organic compounds including 1,1,1-trichloroethane at 120 ug/l, 1,1-dichloroethane at 10 ug/l, and 1,1-dichloroethene at 14 ug/l.

### **3.3 1998/1999 Tetrattech NUS Investigation**

In 1998, EPA's contractor conducted a Remedial Investigation (RI) for the North Penn Area 2 Superfund site - Steiert Facility to address and investigate on-Site and off-site contamination. The objectives of the field investigation were to: 1) determine if the Site was a source of VOC contamination; 2) determine the extent of metal contamination (particularly lead) in on-Site soils and on and off-site surface water and sediment; and 3) provide a comprehensive assessment of the current and potential human health and environmental risks associated with the Site for areas on-Site and off-site. In order to accomplish the objectives of the RI, samples of surface and subsurface soils, surface water and sediment, and groundwater were collected and analyzed.

As part of this work, thirty seven surface soil samples were collected from across the Site. Each of these samples was analyzed for volatile and semivolatile organic compounds (VOC and SVOC), pesticides and metals. There were also five subsurface soil samples collected at the Site and each was analyzed for VOCs and one of the five samples was analyzed for metals. Additionally, thirty five sediment samples and nine surface water samples were collected from on-Site and immediately adjacent off-site ponds and drainage swales. Each of these samples was analyzed for metals. Site maps developed by EPA's contractor that show the locations at which of these samples were collected are provided in Appendix C. Also, the results of the analysis of

these samples were tabulated by EPA's contractor and these tables are included in Appendix C as well.

The results of the remedial investigation did not find evidence that a significant amount of VOCs was released at the Site and/or migrated into the underlying groundwater as no elevated VOC levels were detected in the soil samples. Also, with the exception of two soil samples that exhibited a few SVOCs, no SVOCs or pesticides were detected at elevated levels. The two soil samples in which elevated SVOCs were detected also displayed elevated lead levels and were subsequently remediated. With the exception of lead, no metals were detected at consistently elevated levels in the samples. Lead was detected above the EPA AOC Cleanup Standard of 1,000 milligrams per kilogram (mg/kg) for soils and 500 mg/kg for sediments in a number of the soil/sediment samples collected across the Site. However, and with the exception of one background soil sample, lead was not detected above the EPA AOC Cleanup Standards in any of the soil/sediment samples collected at off-site locations. EPA's contractor and EPA determined that the elevated levels of lead could potentially result in adverse human health and/or ecological effects. Due to these potential impacts, an Engineering Evaluation/Cost Analysis (EE/CA) was prepared by EPA in August 1999. The recommended alternative for a non-time critical removal action for the Site included focused excavation of surface soils and sediment, draining water and excavating sediments from the on-Site ponds, and implementation of appropriate institutional controls.

### **3.4 2002 American Resource Consultants, Inc. Investigation**

In July of 2002, ARC implemented soil delineation sampling at the Site. The results of this sampling formed the basis for the areas identified in the Work Plan that needed to be remediated. As part of this sampling, ARC collected a total of 153 soil/sediment samples from 77 sample stations established across the Site. These sample stations were designated PS-1 through PS-26 and PS-29 through PS-79 and they were established at the approximate locations shown on Figure 4.

A shallow sample, consisting of soils/sediments from 0 to 0.5-feet below the ground surface (BGS), drainage swale, or pond bottom was collected at each of the sample stations and a deeper sample, designated with a "D" and consisting of soils from 0.5 to 1-foot BGS, drainage swale, or pond bottom was collected at 66 of the sample stations. Sample stations PS-34 and PS-35 were established in Pond No. 2 and sample stations PS-37 and PS-38 were established in Pond No. 3. All other samples were collected from either soil areas or drainage swales connecting Pond No. 1 and Pond No. 3. The results of the analysis of the samples are summarized in Table 1 and are presented and discussed below in Section 3.4 as part of the discussion of the results of the additional delineation sampling performed at the Site by Penn E&R.

In August and November of 2002, ARC also reportedly performed additional delineation and characterization sampling, including the collection of shallow (0 to 0.5-feet BGS) and deeper (0.5 to 1-foot BGS) soil samples throughout the property and in areas of concern, as well as water samples from the on-Site ponds and former drinking water well, collected lead wipe samples from on-Site buildings, and collected soil samples for VOC analysis near Pond No. 1. Penn E&R did not review any results regarding this sampling; however, as indicated in the Work

Plan, given the results previously generated by EPA's contractor and those generated by ARC, EPA was satisfied that the Site was not a primary source for the VOCs in ground water associated with the North Penn Area 2 Superfund site and that lead was the primary contaminant of concern at the Site.

### **3.5 2006 Penn E&R Investigation**

To supplement the sample results generated by EPA's contractor and ARC, Penn E&R implemented additional delineation sampling at the Site in June and July of 2006. The primary objectives of this sampling were to define contaminant boundaries and identify those areas where lead was present above 10,000 mg/kg. As part of this sampling, Penn E&R established an additional 130 sample stations at the Site. These sample stations were designated SS-1 through SS-130 and they were established at the approximate locations shown on Figure 4.

A shallow sample, consisting of soils/sediments from 0 to 0.5-feet BGS or drainage swale was collected at each of the sample stations and a deeper sample, designated with a "D" and consisting of soils from 0.5 to 1-foot BGS or drainage swale was collected at 16 of the sample stations. The sample depths were selected as a continuation of the previous delineation investigations completed by ARC. As discussed below, in areas where contaminant boundaries were not completely delineated, both horizontally and vertically, over-excavation was completed in these areas and the results of post-excavation sampling were subsequently used to ensure that EPA AOC Cleanup Standards for lead were met. Also, four sample stations were established in Pond No. 4. These sample stations were designated 4-1 through 4-4 and both a shallow and deep sediment sample was collected at each of these sample stations. Penn E&R also reestablished sample locations previously established by ARC. The ARC sample stations that were reestablished by Penn E&R included PS-11, PS-19, PS-24, PS-25, PS-27, PS-28, PS-29, PS-33, PS-36 and PS-40 (see Figure 4). All of the samples collected by Penn E&R were analyzed for lead and the results of the analysis of these samples are summarized in Tables 2 through 4. A copy of the laboratory results for these samples is included in Appendix D.

In evaluating the soil sample data generated by ARCs (Table 1) and Penn E&R (Tables 2 through 4), the results were compared to the AOC Cleanup Standards developed for the Site by EPA of 550 mg/kg for sediments in the ponds and drainage swales and 1,000 mg/kg for soils. The results of the analysis of the samples collected by ARC and Penn E&R were used to develop the Site Remediation Plan included as Figure 5. A review of Figure 5 shows that there were six primary areas where lead was detected above the EPA AOC Cleanup Standards and which required remediation. These included three areas in the north/northwest portion of the Site (Northwest Areas A through C), a small area located in the northcentral portion of the Site (Northcentral Area A), the area along the drainage swale that runs between Pond Nos. 1 and 3 (the Eastern Drainage swale), and a smaller area located in the east central portion of the Site (Eastern Area A). Figure 4 also shows the approximate limits of the areas where lead was detected above 10,000 mg/kg.

In general, the sampling was successful in delineating the contaminant boundaries. However, the limits of the lead exceedances in soils in Northwest Area B and along the eastern and southwestern sides of the Eastern Drainage swale area had not been completely defined. As

discussed in Section 4.0, these areas were over-excavated and the results of the subsequent post-excavation sampling used to confirm that the EPA AOC Cleanup Standards and Act 2 MSCs in these areas, and all remediated areas, had been met. Of the 82 deep samples collected across the Site, only 16 of the samples displayed lead above the EPA AOC Clean Standards. The soils in the areas where lead was detected above EPA AOC Cleanup Standards in the deep samples (i.e., most of Northwest Area B and the central portion of Northwest Area C, and most of the Eastern Drainage swale area) were excavated to at least 1.5 feet with soils in all other areas excavated down to at least 0.5 feet. The results of post-excavation samples were then used to confirm that all lead impacted soils at depth had also been removed.

Sediment samples were collected from Pond Nos. 1 (samples PS-27-R and PS-28-R in Table 4), 2 (samples PS-34, 34D, 35 and 35D in Table 1) and 4 (samples 4-1, 4-1D, 4-2, 4-2D, 4-3, 4-3D, 4-4 and 4-4D in Table 3), and from the drainage swale located along the southwest portion of the Site (samples S-1 through S-29 in Table 2). Lead was not detected above the EPA AOC Cleanup Standard for sediments of 550 mg/kg in these samples.

The results of the sampling completed by Penn E&R as well as the ARC sample results were submitted to EPA by Penn E&R in a letter dated September 12, 2006. Figure 5, which was included with Penn E&R's letter to EPA, formed the basis for the remediation that was subsequently implemented at the Site and was a requirement of the Work Plan.

## 4.0 SITE REMEDIATION

As discussed earlier, Oaktree and EPA entered into an AOC in June of 2005 for the removal response action at the former Steiert facility. The AOC required, among other things, that Oaktree remediate lead impacted soils and sediments based on cleanup standards established for the Site by EPA (AOC Cleanup Standards) for lead in soils of 1,000 mg/kg and for lead in sediments of 550 mg/kg. As outlined in the AOC, Oaktree developed and subsequently submitted, and EPA approved, a Revised Removal Action Work Plan (Work Plan) for the Site, that was developed by ARC and dated June, 2004, an addendum to the Work Plan prepared by ARC and dated May 6, 2005, and a September 12, 2006 addendum to the Work Plan prepared by Penn E&R. The Work Plan and Addendums (Work Plan), outlined the procedures and methodologies that Oaktree followed as part of the implementation of the on-Site remedial activities and the requirements of the AOC.

As outlined in the AOC and approved Work Plan, the remedy implemented at the Site included the excavation and subsequent on-Site relocation and capping of all soils with lead concentrations above 1,000 mg/kg and sediments with lead concentrations above 550 mg/kg. Originally, the excavated soils/sediments were to be capped beneath building slabs, asphalt parking lots and placed in a berm and then capped; however, Oaktree subsequently requested and EPA approved, the use of all excavated soils/sediments to construct a berm along the western side of the Site, which was then capped with a least 2-foot of clean soil. Also, excavated soils exhibiting lead above 10,000 mg/kg were first stabilized, tested using the Toxicity Characteristic Leaching Procedure test method to ensure that the stabilized soils met EPA's RCRA regulatory level for lead, after which the soil was relocated to the berm and then capped.

The remediation activities implemented at the Site are discussed below.

### 4.1 Site Preparation

#### Permits

With the exception of the approval of the Work Plan by EPA and the PADEP, no permits were required or obtained to implement the on-Site remedial activities. Oaktree notified Hatfield Township regarding the implementation of the on-Site remedial activities, however, no specific permits for these activities was required.

#### Erosion and Sedimentation Control Issues

An Erosion and Sedimentation Control (E&S) Plan was developed for the Site. A copy of this plan is included as Figure 6. Mr. Roger Altemose of Oaktree met with Mr. Jeff McKenna, the Hatfield Township representative for the Montgomery County Conservation District on Thursday, August 31, 2006 to present and discuss the E&S Plan. Prior to implementing any on-Site soil excavation activities, all required erosion and sedimentation control devices, as shown on Figure 6 were installed. The E&S control devices installed at the Site were maintained throughout the implementation of the remedial activities.

### Installation of a Construction Decontamination Pad(s)

As indicated above, all excavated soil and sediment was capped and left on-Site. Other than standard vehicles, no remediation equipment (i.e., dump trucks, excavators, loaders, etc.) left the Site during the implementation of the remedial activities. Also, there is an asphalt covered driveway that connects the Site to Bergey Road and there is an asphalt covered driveway that circles the Site. Therefore, a traditional construction entrance was not required because, as discussed below, temporary decontamination pads were established in close proximity to each area being remediated and the asphalt access roads. As a result, once equipment was decontaminated, it was moved directly onto the asphalt access road so no dirt was ever tracked off the Site.

As discussed further below, the only heavy equipment that was allowed to access the areas to be remediated included a track excavator, dozer and/or loader. If and when this equipment was removed from the remediated areas, it was first cleaned on a temporary decontamination pad, which was constructed outside the areas being remediated. Three temporary decontamination pads were constructed at the Site. The pad(s) were generally constructed with plywood/plastic and/or gravel/rip-rap or a combination of these. The equipment that entered any area requiring remediation was decontaminated in accordance with the Work Plan whenever it was removed from the impacted soil/sediment areas. The wash water at the pads was either collected and sprayed onto the excavated soil or allowed to infiltrate into the underlying soil, which was then remediated after the pad was removed.

The dump trucks used to transport the excavated soil to the berm remained outside of the remediated areas and generally did not come in contact with the potentially impacted soil. If a dump truck inadvertently entered an impacted area, it was properly decontaminated before it was allowed back onto the asphalt access road. Unless loaded on asphalt, which was first covered with plastic, the areas on which the trucks were loaded, designated temporary truck loading areas, were covered with plastic sheeting and the trucks were inspected each time they were loaded and any soil that may have fallen onto the sides of the trucks was brushed off onto the plastic sheeting.

### Work Zones

Yellow caution tape was placed around the perimeter of each of the areas to be remediated prior to the initiation of any on-Site activities. The areas within the caution tape were considered Exclusion Zones. Only personnel who were 40-hour OSHA trained and had reviewed the site-specific Health and Safety Plan included in the Work Plan, and which were required to implement the remedy, were allowed inside the exclusion zones. The temporary decontamination pads and the temporary truck loading areas comprised the Contamination Reduction Zone (CRZ). Personal decontamination stations were generally setup and completed on or near the temporary decontamination pads.

The decontamination of equipment and personnel followed the procedures included in the approved Work Plan.

## Clearing

The majority of the area to be excavated was covered with only grass and weeds. There were also a number of trees located along the periphery and a few within some of the impacted areas that were removed by Oaktree prior to the implementation of the remedial activities. No clearing was completed in any of the impacted areas until the work zones, as discussed above had been established and the decontamination pad(s) constructed. The clearing was completed with an excavator or similar piece of equipment. Wood from the trees was shipped off-site and, with the exception of some larger root balls, small limbs and other similar materials were mulched and then used on-Site or shipped off-site. Some of the root balls for the larger trees located at the Site were placed in the anchor trench located in the center and at the bottom of the berm.

## Site Maintenance

As indicated above, there is an asphalt access road that runs throughout the Site. This access road was used by the dump trucks to transport the excavated soil from the impacted areas to the berm. Oaktree used a street sweeper attachment to keep this access road free of dirt. If required, the road was wet with a sprayer prior to it being swept to reduce dust levels. Although the soils/sediments excavated were generally very damp and little to no dust was generated during the excavation activities, the water sprayer was available throughout the remedial activities to wet down excavated soils/sediments to reduce dust levels.

## **4.2 Health and Safety and Air Monitoring**

As indicated above, the approved Work Plan included a site-specific Health and Safety Plan, which was followed throughout the implementation of the remedial activities. All personnel involved in the remedial activities were 40-hour OSHA trained and were required to review the site-specific Health and Safety Plan and sign it prior to the implementation of any remedial activities. Also, periodic tailgate safety meetings were held during the implementation of the remedial activities.

The field work was generally implemented wearing Level D personal protective equipment including boots, long sleeves and long pants, safety glasses and hard hats, or modified Level D when tyvek suits were also worn. During the stabilization of soils with lead concentrations exceeding 10,000 mg/kg, dust masks and tyvek suits were worn by the personnel mixing the stabilizing agent with the impacted soil. In order to ensure that the remedial activities did not generate dust in excess of the site-specific target level of 1.0 milligram per cubic meter ( $\text{mg}/\text{m}^3$ ), Penn E&R used a Miniram dust monitor to monitor for total airborne dust levels throughout the remedial activities. The Miniram air monitor was used to obtain continuous measurements for total particulates and was generally installed immediately downgradient of the areas where impacted soils were being removed. No exceedances of the 1.0  $\text{mg}/\text{m}^3$  site-specific target level for total particulates were recorded throughout the remedial activities.

### 4.3 Remediation of Soils

The soil excavation activities were conducted by personnel from Oaktree and managed/directed by personnel from Penn E&R. The EPA and EPA's contractor (TetraTech NUS) ) provided oversight throughout the implementation of the remedial activities. As indicated above, all on-Site personnel involved with the implementation/oversight of the remedial activities were 40-hour OSHA trained. No one was allowed within the areas to be remediated that was not 40-hour OSHA trained. Penn E&R oversaw all excavation activities to ensure that these activities were completed safely and in accordance with the requirements of the site-specific Health and Safety Plan and the Work Plan.

As discussed in Section 3.0, detailed characterization sampling was implemented at the Site to delineate the extent of the lead impacted soils and sediments. The results of this sampling were used to generate Figure 5, which shows the locations at which lead was detected above its EPA established AOC Cleanup Standards of either 550 mg/kg for sediments in the ponds and drainage swales or 1,000 mg/kg for soils. A review of Figure 5 shows that there were six primary soils areas where lead was detected above the EPA AOC Cleanup Standards and which were subsequently remediated. These included three areas in the northwest portion of the Site, which were designated Northwest Area A, Northwest Area B and Northwest Area C; a small area in the northcentral portion of the Site, which was designated Northcentral Area A; the area along the drainage swale that runs between Pond Nos. 1 and 3, which was designated the Eastern Drainage Swale; and a small area located in the east central portion of the Site, which was designated Eastern Area A. Figure 5 also shows the approximate limits of these six areas and the areas where lead was detected above 10,000 mg/kg.

On October 18, 2006 and prior to the initiation of the remedial activities, a Project Kickoff Meeting was held at the Site with EPA, TetraTech, Oaktree and Penn E&R. The following issues were discussed at this meeting:

1. Project Overview
  - Areas Requiring Remediation
  - Primary Contaminant of Concern
  - Contact List
2. Weekly Site Meeting/Status Reports
3. Health and Safety Plan
  - Site Specific Health & Safety Plan
  - Daily Tailgate Meetings
4. Sequence of Work
  - Complete Installation of E&S Controls/Detention Basin
  - Installation of Construction Entrance
  - Construction of Decontamination Pads/Stockpile Areas
  - Construction of Work Zones
  - Dewatering the Ponds
  - Excavation of Impacted Soil/Sediment - 0.5 feet to 1.5 feet BGS

- Daily Downwind Perimeter/Work Air Monitoring
- Modified Level D PPE
- Personal Decontamination/Temporary Truck Loading Areas
- Transportation of Excavated Soils/Sediments - Stockpile Areas/Berm
- Mixing Soils with Sediments/Temporary Drying Pads
- Soil Stabilization
  - Mixing
  - Transportation of Stabilized Soils/Sediments - Stockpile Areas/Berm
  - TCLP Sampling - 1 Composite per 200 Cubic yards
- Post-Excavation Sampling
  - Locations to be Selected by Penn E&R and EPA/TetraTech
  - Sample Frequency About 12 per 3000 Cubic Yards Excavated
  - Samples to be Analyzed for Lead by Test America (formerly GLA)

The soil excavation was generally completed using an excavator, dozer and/or loader, or a combination of the three. As indicated above, the equipment used to excavate the impacted soils remained in the Exclusion Zone established around each area. If and when the equipment was removed from the Exclusion Zone it was properly decontaminated on the temporary decontamination pads. The excavated soils were loaded directly into dump trucks located just outside the Exclusion Zones in temporary truck loading areas, which were covered with plastic sheeting. With the exception of the soils containing lead above 10,000 mg/kg, the soil was then transported to the berm area located along the western property boundary. The soil containing lead above 10,000 mg/kg was, as discussed below, stabilized first and then transported to the berm.

As discussed in Section 5.0, post-excavation soil samples were collected as the excavation work proceeded. The results of the analysis of these samples were used to ensure that the EPA AOC Cleanup Standards and PADEP Act 2 MSCs had been met. If the Cleanup Standards/Act 2 standards were exceeded, additional excavation and sampling in the areas represented by these exceedances was implemented.

The soil remediation activities implemented at the Site are summarized below.

### **Soils With Lead Concentrations Below 10,000 mg/kg**

As indicated above, there were six primary soils areas at the Site where lead was detected above the EPA AOC Cleanup Standards and which were subsequently remediated. These included three areas in the northwest portion of the Site, which were designated Northwest Area A, Northwest Area B and Northwest Area C; a small area in the northcentral portion of the Site, which was designated Northcentral Area A; the area along the drainage swale that runs between Pond Nos. 1 and 3, which was designated the Eastern Drainage Swale; and a small area located in the east central portion of the Site, which was designated Eastern Area A. All soil excavated from the six areas was transported directly to the soil berm that was constructed along the western property boundary. Figure 7 shows the limits of the six remediated areas and the location of the berm. The detailed location, limits and final dimensions of the berm are shown on Figure 8.

As shown on Figure 7, the limits and the boundaries of Northwest Area A were located completely beneath the footprint of the berm that was constructed at the Site. Therefore, the impacted soils within the limits of Northwest Area A were not excavated but were instead left in-place and capped with the berm. The berm, as discussed below, was subsequently capped with at least 2-foot of clean soil.

The location and final limits of Northwest Area B are shown on Figure 7. This area was about 105 feet long by 120 feet wide at its greatest extent and was located just to the north of Northwest Area C. Northwest Area B was excavated to a depth of between 1.5 feet and 2-feet BGS and about 650 cubic yards of impacted soil was excavated from this area and moved to the berm. During the collection of post-excavation samples from this area, which is discussed in Section 5.0, two small areas of soil with lead concentrations exceeding 10,000 mg/kg were encountered at the approximate locations shown on Figure 7. These soils were stabilized first, as discussed below, prior to being transported to the berm.

The location and final limits of Northwest Area C are shown on Figure 7. This area was about 230 feet long by 110 feet wide at its greatest extent and was located just to the south of Northwest Area B. Northwest Area C was excavated to a depth of between 1.5 feet and 2-feet BGS and about 1,200 cubic yards of impacted soil was excavated from this area and moved to the berm. The two areas (see Figure 7) within Northwest Area C where lead was detected above 10,000 mg/kg during the site characterization sampling discussed in Section 3.0 were stabilized first, as discussed below, prior to being transported to the berm.

In 1998/1999, EPA's contractor collected soil sample SS-05 (see Appendix C for a map that shows the location at which SS-05 was collected) from the area designated by Penn E&R as Northcentral Area A. Lead was detected in this sample at a concentration of 2,660 mg/kg, which exceeded the EPA AOC Cleanup Standard for lead of 1,000 mg/kg. Since this area appeared to be a small, isolated area, no delineation sampling was completed in this area. Rather, over-excavation of this area was completed and the results of post-excavation samples were subsequently used to ensure that all lead impacted soil had been removed. The location and final limits of Northcentral Area A are shown on Figure 7. This area was about 30 feet long by 10 feet wide and was located just to the east of Northwest Areas B and C. This area was excavated to a depth of between 1.5 feet and 2-feet BGS and about 15 cubic yards of impacted soil was excavated from this area and moved to the berm.

The Eastern Swale Area was the largest of the areas requiring remediation. The location and final limits of this area are shown on Figure 7. This area was irregularly shaped and was about 390 feet long by 360 feet wide (although most of this area was less than 150 feet wide) at its greatest extent and was located between former Pond Nos. 1 and 3. Soils within the Eastern Swale Area were excavated to a depth of between 1.5 feet and 2-feet BGS and about 3,875 cubic yards of impacted soil was excavated from this area and moved to the berm. The central portion of this area, as shown on Figure 7, contained soil with lead concentration exceeding 10,000 mg/kg, which was stabilized first, as discussed below, prior to be transported to the berm.

The location and final limits of Eastern Area A are shown on Figure 7. This area was about 90 feet long by 60 feet wide at its greatest extent and was located just to the east of the Eastern Swale Area. Eastern Area A was excavated to a depth of between 1.5 feet and 2-feet BGS and about 150 cubic yards of impacted soil was excavated from this area and moved to the berm. Although no soils with lead concentrations exceeding 10,000 mg/kg were located in this area, lead levels in soils in the western side of this area exhibited lead concentrations above 9,500 mg/kg. Therefore, the soil removed from the western side of Eastern Area A was stabilized first, as discussed below, prior to be transported to the berm.

### **Soils With Lead Concentrations Exceeding 10,000 mg/kg**

As discussed earlier, the AOC required that soils/sediments with lead concentrations exceeding 10,000 mg/kg be stabilized so that lead would not leach from the stabilized soils at levels exceeding EPA's RCRA regulatory level of 5 milligrams per liter (mg/l). The areas where lead was detected above 10,000 mg/kg are shown on Figures 5 and 7. These areas included two small areas in Northwest Area C (less than 100 cubic yards), a large area located in the central portion of the Eastern Swale area consisting of about 1,700 cubic yards of soils, and two small areas located at the southern end of the Eastern Swale area (less than 100 cubic yards). Also, there were two small areas in Northwest Area B (less than 50 cubic yards) where post-excavation soil samples indicated lead concentrations exceeded 10,000 mg/kg and, although no soils with lead concentrations exceeding 10,000 mg/kg were located in Eastern Area A, the soil removed from the western side of this area (less than 50 cubic yards) was also stabilized first prior to be transported to the berm. The following procedures were implemented to stabilize the soils.

Initially, Penn E&R identified a product that could be easily mixed with the soil, reduce the leachability of the lead and was environmentally friendly. The product selected was EnviroBlend<sup>®</sup>, which consists of a varying mixture of magnesium oxide and calcium phosphate. An MSDS sheet for the EnviroBlend<sup>®</sup> is included in Appendix E. To determine the quantity of EnviroBlend<sup>®</sup> which needed to be mixed with the soil to reduce the leachable lead level to less than 5 mg/l, a series of treatability tests where soil from the Site was mixed with various quantities of EnviroBlend<sup>®</sup> were implemented. Through this testing it was determined that about 7.5-gallons of EnviroBlend<sup>®</sup> had to be mixed with 3 cubic yards of soil to ensure that the leachable lead level in the resultant stabilized soil was less than 5 mg/l. As discussed in Section 5.0, the stabilization of the soil generally resulted in leachable lead levels in the stabilized soil of less than 1.0 mg/l. The EnviroBlend<sup>®</sup> was delivered in large plastic totebags and came in a solid, pellet like form that easily dissolved in the soil.

As indicated in a February 23, 2007 memorandum from Penn E&R to EPA, Oaktree requested and EPA approved a modification to the approach used to stabilize the soils at the Site. Rather than excavating and then placing the impacted soils in a roll off for mixing, Oaktree first excavated the impacted soil and then placed the soils onto the concrete building slab located just to the north of the Eastern Swale Area (see Figure 7) where a majority of the soils with lead levels exceeding 10,000 mg/kg were located. This modification was requested as the top 10-inches of soil at the Site at that time was frozen and, therefore, when the soil was excavated it came out in large chunks, which made the stabilization process difficult since the soil could not be properly homogenized in the roll off. The placement of the soil on the concrete pad allowed it

to be broken up with the use of the dozer so that a more thorough mixing of the stabilizing agent could be completed. Also, the use of the concrete pad rather than the roll off for mixing was much more efficient and effective. As part of this process, the following field activities were implemented to ensure that there was no cross-contamination of other areas and the soils were properly mixed with the EnviroBlend<sup>®</sup>:

1. Hay bales wrapped in plastic were installed around the three downslope sides of the pad/mixing area.
2. The soil was excavated in small, approximately 25 to 50 cubic yard lots, and then placed on the pad. The soils were then spread out, homogenized with the dozer and then the stabilizing agent was mixed into the soil.
3. The stabilized soil was then sampled based on a frequency of 1 composite per 200 cubic yards treated and the samples were submitted for analysis of leachable lead using the Toxicity Characteristic Leaching Procedure (TCLP) test method.
4. Based on the results of the TCLP analysis, which are discussed in Section 5.0, the treated soil was either transported to the berm or additional EnviroBlend<sup>®</sup> was mixed with the soil to further reduce the leachable lead level.
5. This process was continued until all soil with lead concentrations exceeding 10,000 mg/kg had been properly stabilized.

All equipment used to excavate, transport and homogenize/mix the soils remained in the exclusion zone or on the concrete pad. If any equipment was removed during the work it was decontaminated in accordance with the approved Work Plan. The dump trucks used to transport the soil to the berm remained outside the exclusion zone on a temporary loading pad as previously described. The concrete pad and any soil on the pad were covered with plastic at the completion of each day of work.

Upon completion of the soil stabilization activities, soils on the pad were completely scraped off and then the pad was decontaminated with a high pressure washer. The concrete pad was then removed, broken up and used to backfill adjacent Pond No. 1 after it had been properly remediated. Soils to a depth of 2 feet below the concrete pad were then excavated and transported to the berm. As discussed in more detail in Section 5.0, post-excavation soil samples were collected from the area beneath the pad after the 2-foot layer of soil had been removed.

#### **4.4 Remediation of Pond Sediments**

As indicated earlier, there were four process ponds formerly located on the Site at the approximate locations shown on Figure 5. Based on characterization sampling completed at the Site, as discussed in Section 3.0, lead was detected above its EPA AOC Cleanup Standard for sediments of 550 mg/kg in the sediment samples collected from Pond Nos. 1 and 3. Therefore, and as discussed below, the sediments in these ponds were excavated, removed and placed in the berm.

With the exception of a single sample, lead was not detected above its AOC Cleanup Standard in Pond No. 2. The one sample from Pond No. 2 in which lead was detected above its EPA AOC Cleanup Standard was collected by EPA's contractor (sample NP-SD-33) and the sample exhibited a lead level of 740 mg/kg. The other sample collected from Pond No. 2 by EPA's

contractor (sample NP-SD-32) exhibited a lead level of 50.5 mg/kg. Also, the four sediment samples subsequently collected from Pond No. 2 by ARC (samples PS-34-Pond2 shallow and deep and sample PS-35-Pond 2 shallow and deep) each displayed lead at less than 100 mg/kg. Given these results and the fact that the average lead level for the Pond No. 2 sediment samples was much less than EPA's AOC Cleanup Standard of 550 mg/kg no remediation of the Pond No. 2 sediments was implemented. Also, no remediation of sediments in Pond No. 4 was implemented since the two sediment samples collected from Pond No. 4 by EPA's contractor and the eight sediment samples collected from Pond No. 4 by Penn E&R (see Section 3.0) all displayed lead levels below EPA AOC Cleanup Standard for sediments of 550 mg/kg.

Prior to implementing remedial activities in Pond Nos. 1 and 3, it was necessary to drain the water from each pond. As part of this process, Penn E&R collected a grab water sample from each of Pond Nos. 1 through 3. Pond No. 4 could not be sampled as it was dry at the time of sampling. The samples from Pond Nos. 1 through 3 were collected inside and just before the outfall associated with each pond. The three samples were submitted to the approved contract laboratory, Test America, located in King of Prussia, PA for analysis of lead. The results of the analysis of these samples are summarized in Table 5 and a complete copy of the results is included in Appendix F. A review of Table 5 shows that lead was detected at 12 micrograms per liter (ug/l) in the Pond No. 1 sample and at 29 ug/l in the Pond No. 3 sample. Lead was not detected above the laboratory detection limit in the Pond No. 2 sample. Given these results, the water from Pond No. 2 was pumped through a bag filter and then into the swale in which the pond had historically discharged. Also, Penn E&R requested a temporary approval from PADEP to discharge the water from Pond Nos. 1 and 3 into the on-Site detention basin and then into the swale into which these ponds had historically discharged.

On October 10, 2006, Penn E&R was granted approval from the PADEP for the temporary discharge of treated water from the detention basin into swales that eventually drained into the West Branch of Neshaminy Creek. A copy of the PADEP approval letter is provided in Appendix G. The primary requirement of the permit was that the water discharged from the detention basin had to be tested to confirm that lead levels were less than 15 ug/l. Based on this approval, the water from Pond Nos. 1 and 3 was discharged into the detention basin. Once in the detention basin, this water was sampled and found to contain lead at levels exceeding PADEP's discharge level of 15 ug/l. Based on these results and as discussed in Section 5.0, this water was subsequently treated over an extended period before test results confirmed lead levels were below 15 ug/l and remaining water in the detention basin could be discharged into the drainage swale.

Once the water from the ponds was removed, the sediments in Pond No. 3 were excavated. The sediments were temporarily placed on plastic just outside the pond so that water could drain from the sediments back into the pond. The water that drained from the sediments as well as other residual water generated during the removal of sediments from Pond No. 3 was collected and discharged into the detention basin. To help absorb some of the water in the sediments removed from Pond No. 3, dry soil excavated from the Eastern Swale area was mixed with the sediments. Once dried or mixed sufficiently, the sediments were loaded into dump trucks and transported to the berm for placement. The final limits of the Pond No. 3 remediated area are shown on Figure 7. This area was about 120 feet long by 40 feet wide at its greatest extent and was excavated to a depth of between 3 feet and 4-feet BGS. In all, about 400 cubic yards of sediments were

removed from Pond No. 3. The post-excavation sampling that was completed in Pond No. 3 and the results of this sampling are discussed in Section 5.0.

The sediments from Pond No. 1 were excavated and temporarily stockpiled on plastic on the concrete building slab located just to the east of Pond No. 1. The sides of the plastic were bermed with hay bales wrapped in plastic, which prevented water draining from the sediments from discharging into the surrounding areas. A majority of the water that drained from the sediments flowed back into the pond. This water as well as other residual water generated during the excavation of the sediments was collected and then discharged into the detention basin. The sediments excavated from Pond No. 1 were removed in the winter so the stockpiled sediments were freezing at night and then thawing during the day, which prevented the sediments from sufficiently drying so they could be transported to the berm. Therefore, Oaktree requested and EPA approved the mixing of the sediments with soil located just to the north/northeast of the Pond No. 1 area. The EPA required that additional silt fence and hay bales be installed around this mixing area, the location of which is shown on Figure 7. Also, EPA required that Oaktree collect post-excavation samples from the mixing area after the sediments were mixed and removed to the berm to ensure that no impacted soils remained in this area.

The sediments were then mixed with the soil until they were sufficiently solidified so they could be transported to the berm. The final limits of the Pond No. 1 remediated area are shown on Figure 7. This area was about 150 feet long by 30 feet wide at its greatest extent and was excavated to a depth of between 3 feet and 4-feet BGS. In all, about 400 cubic yards of sediments were removed from Pond No. 1. The post-excavation sampling that was completed in Pond No. 1 as well as in the soil mixing area and the results of this sampling are discussed in Section 5.0.

#### **4.5 Capped Berm Area**

In all, about 6,700 cubic yards of impacted soils and sediments were excavated at the Site. This material was placed in a berm located along the western property boundary at the location shown on Figure 7. The berm is about 550 feet long, by 50 feet wide by about 15 feet high. The surveyed location, dimensions and limits of the berm are shown on Figure 8. Figure 8 also includes surveyed cross-sections of the berm. Once all impacted soil and sediment had been placed in the berm, the berm was capped with at least 2 feet of clean soil. The clean soil was obtained from areas on-Site that were not impacted with lead. To confirm this, and as discussed in Section 5.0, the areas from which the clean soil was obtained were sampled and the samples analyzed for lead. The samples were collected from areas approved by EPA and all samples exhibited lead levels well below the EPA AOC Cleanup Standards and Act 2 residential MSCs.

## **5.0 POST-EXCAVATION SOIL SAMPLING**

As discussed in Section 4.0, the remedial activities required by the AOC and outlined in the Work Plan were implemented. Through this work, about 6,700 cubic yards of lead impacted soil/sediment was excavated and relocated to the berm. To confirm the effectiveness of the remedial activities, post-excavation soil samples were collected. The post-excavation samples were collected following the procedures and methodologies outlined in the Work Plan. All post-excavation sample locations were approved by EPA or EPA's contractor and were analyzed for lead by the approved contract laboratory, Test America Analytical Testing Corporation located in King of Prussia, Pennsylvania using EPA Method 6010B.

During excavation and post-excavation sampling, EPA's contractor was on-site and would periodically collect split samples with Penn E&R to ensure the accuracy of the sample collection methods implemented by Penn E&R and the analytical methods used by the contract laboratory, of Test America. EPA's contractor split fifty-three samples with Penn E&R. Forty-five of the split samples were analyzed for total lead and eight of the split samples were stabilized samples analyzed for TLCP lead. There was a rather good correlation between the results of the analysis of the EPA's contractor split samples and the sample results for the corresponding samples collected by Penn E&R. The results of the EPA's contractor split samples are included in Appendix H.

In evaluating the post-excavation soil sample results, the data were compared to the EPA AOC Cleanup Standards developed for the Site of 550 mg/kg for sediments and 1,000 mg/kg for soils. Also, the analytical results for the post-excavation soil samples collected outside the area encompassed by the berm were compared to Act 2 residential MSCs. However, the results of samples collected from the capped berm area were compared to the EPA AOC Cleanup Standards and, since the area encompassed by the berm will be limited to non-residential use, to Act 2 non-residential MSCs.

The activities implemented as part of the post-excavation sampling and the results of these activities are discussed below.

### **5.1 Soils**

Post-excavation soil samples were collected as the excavation work proceeded. The results of the analysis of these samples were used to ensure that the EPA AOC Cleanup Standards and PADEP Act 2 residential MSCs had been met. If the Cleanup Standards/Act 2 standards were exceeded, additional excavation and sampling in the areas represented by these exceedances was implemented, as discussed below.

As discussed in Section 4.0, there were six primary soils areas at the Site where lead was detected above the EPA AOC Cleanup Standards and which were subsequently remediated. These included three areas in the northwest portion of the Site, which were designated Northwest Area A, Northwest Area B and Northwest Area C; a small area in the north central portion of the Site, which was designated Northcentral Area A; the area along the drainage swale that runs between Pond Nos. 1 and 3, which was designated the Eastern Drainage Swale; and a small area

located in the east central portion of the Site, which was designated Eastern Area A. Figure 7 shows the locations of the six remediated areas and the berm, and the surveyed dimensions of the berm into which the excavated soils were placed are shown on Figure 8.

### **Northwest Area A**

As shown on Figure 7, the limits and the boundaries of Northwest Area A were located completely beneath the footprint of the berm that was constructed at the Site. Therefore, the impacted soils within the limits of Northwest Area A were not excavated but were instead left in-place and capped with the berm. The berm, as discussed below, was subsequently capped with at least 2-foot of clean soil. Given this, no post-excavation soil samples needed to be obtained from this area.

### **Northwest Area B**

The location and final limits of Northwest Area B are shown on Figure 7. Northwest Area B was initially excavated to a depth of between 1.5 feet and 2 feet below the ground surface (BGS) and about 650 cubic yards of impacted soil was excavated from this area and moved to the berm. After completing remedial activities in this area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling effort, twelve post-excavation soil samples were originally collected from the Northwest Area B excavation. These samples were designated PE-45 through PE-56 and were collected at the approximate locations shown on Figure 9. In addition, one blind duplicate (PE-49A) was obtained at sample location PE-49 to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples PE-49 and PE-56 were split with EPA's contractor. The post-excavation soil samples and the blind duplicate were analyzed for lead by Test America. The results of the analysis of these samples are summarized in Table 6 and a complete copy of the results is included in Appendix I.

A review of Table 6 indicates lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in five of the twelve original post-excavation samples collected from the remediated area. The five original post-excavation samples with exceedances included samples PE-47, PE-50, PE-51, PE-52 and PE-53. As a result of these exceedances, the following additional soil excavation and post-excavation sampling was implemented:

#### Original Post-Excavation Samples PE-47, PE-51 and PE-52

- Three of the post-excavation samples with exceedances, samples PE-47, PE-51 and PE-52 were collected from areas located along the north side of the Northwest Area B. To address these exceedances, approximately 35 cubic yards of additional soil was excavated from the area [75 feet long by 25 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation samples PE-47, PE-51 and PE-52 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, six additional post-excavation samples were subsequently collected from this area and the samples were

designated PE-119 through PE-124 (see Figure 9). Sample PE-119 was split with EPA's contractor.

- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in samples PE-123 and PE-124. As a result of these exceedances, approximately 36 cubic yards of additional soil was excavated from the area [65 feet long by 30 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample locations PE-123 and PE-124 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, five additional post-excavation samples were subsequently collected from this re-excavated area and the samples were designated PE-135 through PE-139 (see Figure 9).
- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-138 and the lead concentration for sample PE-138 exceeded 10,000 mg/kg. As a result of this exceedance, approximately 22 cubic yards of additional soil was excavated from the area [60 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample PE-138, stabilized since lead was detected above 10,000 mg/kg and, as discussed below, then tested to ensure that leachable lead levels were below EPA's RCRA regulatory level of 5 mg/l prior to being transported to the berm. To confirm the effectiveness of these soil excavation activities, three additional post-excavation samples were subsequently collected from this re-excavated area and the samples were designated PE-149 through PE-151 (see Figure 9).
- As shown in Table 6, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-149 through PE-151.

Based on the above results, impacted soils in the area of original post-excavation sample locations PE-47, PE-51 and PE-52 located along the north side of Northwest Area B have been properly remediated.

#### Original Post-Excavation Sample PE-50

- Lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in original post-excavation sample PE-50, which was collected along the south side of Northwest Area B, and the lead concentration for sample PE-50 exceeded 10,000 mg/kg. As a result of this exceedance, approximately 15 cubic yards of additional soil was excavated from the area [40 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-50, stabilized since lead was detected above 10,000 mg/kg and then tested to ensure that leachable lead levels were below EPA's RCRA regulatory level of 5 mg/l (as discussed below) prior to being transported to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this re-excavated area and the samples were designated PE-50A through PE-50D (see Figure 9).
- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-50D. As a result of this exceedance, approximately 11 cubic yards of additional soil was excavated from the area [40 feet long by 15 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-50D and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, three additional post-excavation samples were subsequently

collected from this re-excavated area and the samples were designated PE-50E through PE-50G (see Figure 9).

- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-50G. As a result of this exceedance, approximately 11 cubic yards of additional soil was excavated from the area [40 feet long by 15 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-50G and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, two additional post-excavation samples were subsequently collected from this re-excavated area and the samples were designated PE-50H and PE-50I (see Figure 9).
- As shown in Table 6, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-50H or PE-50I.

Based on the above results, impacted soils in the area of original post-excavation sample location PE-50 located along the south side of Northwest Area B have been properly remediated.

#### Original Post-Excavation Sample PE-53

- Lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in original post-excavation sample PE-53, which was collected along the south side of Northwest Area B. As a result of this exceedance, approximately 22 cubic yards of additional soil was excavated from the area [40 feet long by 30 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-53 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated PE-53A through PE-53D (see Figure 9). Sample PE-53A was split with EPA's contractor.
- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-53D. As a result of this exceedance, approximately 7 cubic yards of additional soil was excavated from the area [20 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-53D and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, three additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated PE-53E and PE-53F (see Figure 9).
- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-53F. As a result of this exceedance, approximately 14 cubic yards of additional soil was excavated from the area [30 feet long by 25 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-53F and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated PE-152 through PE-155 (see Figure 9).
- As shown in Table 6, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in sample PE-155. As a result of this exceedance, approximately 19 cubic yards of additional soil was excavated from the area [50 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-155

and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, three additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated PE-169 through PE-171 (see Figure 9).

- As shown in Table 6, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-169 through PE-171.

Based on the above results, impacted soils in the area of original post-excavation sample location PE-53 located along the south side of Northwest Area B as well as soils throughout the remainder of the former Northwest Area B have been properly remediated as EPA's AOC Cleanup Standard for soils of 1,000 mg/kg has been met.

Also, in evaluating the results of the analysis of the post-excavation samples collected from Northwest Area B, the data were compared to Act 2 residential direct contact (RDC) and residential soil-to-ground water (RSG) MSCs. Of the thirty-five samples collected from this area which were used to demonstrate attainment of the EPA AOC Cleanup Standards (samples PE-45, PE-46, PE-119, PE-120, PE-121, PE-122, PE-135, PE-136, PE-137, PE-139, PE-149, PE-150, PE-151, PE-48, PE-49, PE-50A, PE-50B, PE-50C, PE-50E, PE-50F, PE-50H, PE-50I, PE-53A, PE-53B, PE-53C, PE-53E, PE-152, PE-153, PE-154, PE-169, PE-170, PE-171, PE-54, PE-55 and PE-56), only four of the samples displayed lead above its Act 2 residential MSCs. Lead was detected above its Act 2 RSG MSC of 450 mg/kg in samples PE-46 (490 mg/kg), PE-48 (650 mg/kg), PE-50I (810 mg/kg) and PE-53C (870 mg/kg) with lead also being detected above its Act 2 RDC MSC of 500 mg/kg in samples PE-48, PE-50I and PE-53C. To demonstrate attainment of Act 2 standards, Penn E&R used the 75%/10x rule statistical method described in Section 250.707(b)(1)(i) of the Act 2 regulations. Based on this comparison, a demonstration of attainment of Act 2 residential MSCs can be made for soils in Northwest Area B as thirty-one of the thirty five samples (over 88 percent) had lead concentrations below its Act 2 residential MSCs and of the four samples with exceedances none had lead concentrations that exceeded 10X the most stringent of the Act 2 residential MSCs for lead of 450 mg/kg.

## **Northwest Area C**

The location and final limits of Northwest Area C are shown on Figure 7. The Northwest Area C excavation initially encompassed an area about 230 feet long by 110 feet wide and the soils were excavated to a depth of between 1.5 feet and 2 feet BGS, and about 1,200 cubic yards of impacted soil was excavated from this area. After completing remedial activities in this area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling effort, twelve post-excavation soil samples were originally collected from the Northwest Area C excavation. These samples were designated PE-57 through PE-68 and were collected at the approximate locations shown on Figure 10. In addition, one blind duplicate (PE-63B) was obtained at sample location PE-63 to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples PE-62 and PE-66 were split with EPA's contractor. The post-excavation soil samples and the blind

duplicates were analyzed for lead by Test America. The results of the analysis of these samples are summarized in Table 7 and a complete copy of the results is included in Appendix I.

A review of Table 7 indicates lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in five of the twelve original post-excavation samples collected from the remediated area. The five original post-excavation samples with exceedances included samples PE-58, PE-59, PE-63, PE-67 and PE-68. As a result of these exceedances, the following additional soil excavation and post-excavation sampling was implemented:

- As indicated above, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in original post-excavation samples PE-58, PE-59, PE-63, PE-67 and PE-68. To address these exceedances, approximately 280 cubic yards of additional soil was excavated from the area [200 feet long by 75 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation samples PE-58, PE-59, PE-63, PE-67 and PE-68 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, fourteen additional post-excavation samples were subsequently collected from this area and the samples were designated PE-78 through PE-82 and PE-156 through PE-164 (see Figure 10). In addition, one blind duplicate (PE-163A) was obtained at sample location PE-163 to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment.
- As shown in Table 7, lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in samples PE-160 and PE-163. As a result of these exceedances, approximately 160 cubic yards of additional soil was excavated from the area [175 feet long by 50 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample locations PE-160 and PE-163 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this re-excavated area and the samples were designated PE-165 through PE-168 (see Figure 10).
- As shown in Table 7, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-165 through PE-168.

Based on the above results, impacted soils in the former Northwest Area C have been properly remediated as EPA's AOC Cleanup Standard for soils of 1,000 mg/kg has been met throughout this area.

Also, in evaluating the results of the analysis of the post-excavation samples collected from Northwest Area C, the data were compared to Act 2 RDC and RSG MSCs. Of the twenty-three samples collected from this area which were used to demonstrate attainment of the EPA AOC Cleanup Standards (samples PE-57, PE-60, PE-61, PE-62, PE-64, PE-65, PE-66, PE-78, PE-79, PE-80, PE-81, PE-83, PE-156, PE-157, PE-158, PE-159, PE-161, PE-162, PE-164, PE-165, PE-166, PE-167 and PE-168), only five of the samples displayed lead above its Act 2 residential MSCs. Lead was detected above its Act 2 RSG MSC of 450 mg/kg in samples PE-62 (480 mg/kg), PE-156 (550 mg/kg), PE-162 (630 mg/kg), PE-164 (610 mg/kg) and PE-167 (660 mg/kg) with lead also being detected above its Act 2 RDC MSC of 500 mg/kg in samples PE-156, PE-162, PE-164 and PE-167. To demonstrate attainment of Act 2 standards, Penn E&R used the 75%/10x rule statistical method described in Section 250.707(b)(1)(i) of the Act 2

regulations. Based on this comparison, a demonstration of attainment of Act 2 residential MSCs can be made for soils in Northwest Area C as eighteen of the twenty-three samples (over 78 percent) collected from this area had lead concentrations below its Act 2 residential MSCs and of the five samples with exceedances none had lead concentrations that exceeded 10X the most stringent of the Act 2 residential MSCs for lead of 450 mg/kg.

### **Northcentral Area A**

The location and final limits of Northcentral Area A are shown on Figure 7. The Northcentral Area A excavation encompassed an area about 30 feet long by 10 feet wide and the soils were excavated to a depth of between 1.5 feet and 2 feet BGS, and about 15 cubic yards of impacted soil was excavated from this area. After completing remedial activities in this area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling effort, four post-excavation soil samples were collected from this area. These samples were designated PE-145 through PE-148 and were collected at the approximate locations shown on Figure 11. The post-excavation soil samples were analyzed for lead by Test America. The results of the analysis of these samples are summarized in Table 8 and a complete copy of the results is included in Appendix I.

A review of Table 8 indicates lead was not detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in any of the four post-excavation samples collected from the remediated area. Given the results of the post-excavation samples, all soils remaining in the Northcentral Area A meet the EPA site-specific Cleanup Standard of 1,000 mg/kg and no further remediation is required.

Also, a demonstration of attainment of Act 2 standards can be made using the no exceedance rule as lead was not detected above either its Act 2 RDC MSC or Act 2 RSG MSC in any of the four post-excavation soil samples collected from this area.

### **Eastern Drainage Swale Area**

The location and final limits of Eastern Drainage Swale Area are shown on Figure 7. The Eastern Drainage Swale Area was initially excavated into in an irregularly shaped area that was about 390 feet long by 360 feet wide (although most of this area was less than 150 feet wide) at its greatest extent and was located between former Pond Nos. 1 and 3. The Eastern Drainage Swale Area was excavated to a depth of between 1.5 feet and 2 feet BGS and about 3,875 cubic yards of impacted soil were excavated from this area. After completing remedial activities in this area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling effort, eighty-five post-excavation soil samples were originally collected from the eastern Drainage Swale Area. These samples were designated A-1 through A-8, B-1 through B-8, PE-25 through PE-44, PE-83 through PE-89, PE-94 through PE-111, PE-115 through PE-118, and PE-125 through PE-144 and were collected at the approximate locations

shown on Figure 12. In addition, three blind duplicate samples (B-8A, PE-40A and PE-98A) were obtained at sample location B-8, PE-40 and PE-98, respectively to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples A-5, A-7, B-1, B-5, PE-27, PE-33, PE-34, PE-35, PE-84, PE-105 and PE-109 were split with EPA's contractor. The post-excavation soil samples and the blind duplicate were analyzed for lead by Test America. The results of the analysis of these samples are summarized in Table 9 and a complete copy of the results is included in Appendix I.

A review of Table 9 indicates lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in eight of the eighty-five original post-excavation samples collected from the Eastern Drainage Swale remediated area. The eight original post-excavation samples with exceedances included samples PE-26, PE-33, PE-87, PE-95, PE-98, PE-100, PE-103 and PE-133. As a result of these exceedances, the following additional soil excavation and post-excavation sampling was implemented:

#### Original Post-Excavation Sample PE-26

- Post-excavation soil sample PE-26 (see Figure 12) was collected on the border separating impacted soil areas with lead concentrations below 10,000 mg/kg from those areas that contained lead above 10,000 mg/kg. This sample displayed a lead concentration 1,100 mg/kg and was collected after the impacted soil with lead concentrations below 10,000 mg/kg to the south of this location were excavated but prior to the soils with lead concentrations exceeding 10,000 mg/kg to the north of this location were excavated. Therefore, soils at this location were removed when the soils with lead concentrations exceeding 10,000 mg/kg were subsequently excavated. The post-excavation samples collected around the perimeter of sample PE-26, including samples PE-25 and PE-27, which were collected at the same time as sample PE-26 and samples PE-99 and PE-102, which were collected after the soil with lead concentrations exceeding 10,000 mg/kg was removed all displayed lead below the EPA AOC Cleanup Standard of 1,000 mg/kg. The results of these perimeter samples were used to confirm that all impacted soil had been removed from sample location PE-26.

#### Original Post-Excavation Sample PE-33

- Post-excavation sample PE-33, collected from the southwest corner of the Eastern Drainage Swale Area (see Figure 12) displayed a lead level above the EPA AOC Cleanup Standard of 1,000 mg/kg. As a result of this exceedance, approximately 30 cubic yards of additional soil was excavated from the area [40 feet long by 40 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation sample location PE-33 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this area and the samples were designated PE-33A through PE-33D (see Figure 12). Samples PE-33A and PE-33B were split with EPA's contractor.
- As shown in Table 9, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-33A through PE-33D, indicating that this hotspot had been properly remediated.

Based on the above results, impacted soils in the area of original post-excavation sample location PE-33 have been properly remediated.

#### Original Post-Excavation Sample Locations PE-95, PE-98, PE-100, PE-103 and PE-133

- Original post-excavation samples PE-95, PE-98, PE-100, PE-103 and PE-133 all displayed lead above the EPA AOC Cleanup Standard of 1,000 mg/kg. To address these exceedances, approximately 7 cubic yards of additional soil was excavated from adjacent to each area [20 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by these former post-excavation samples and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, one additional post-excavation sample was subsequently collected beneath each newly excavated area at original sample locations PE-95, PE-98, PE-100, PE-103 and PE-133 and these samples were designated PE-95A, PE-98B, PE-100A, PE-103A and PE-133A, respectively (see Figure 12). Samples PE-98B and PE-133A were split with EPA's contractor.
- As shown in Table 9, lead was not detected above its EPA site-specific Cleanup Standard in post-excavation samples PE-95A, PE-98B, PE-100A, PE-103A and PE-133A.

Based on the above results, impacted soils in the area of original post-excavation sample locations PE-95, PE-98, PE-100, PE-103 and PE-133 have been properly remediated.

#### Original Post-Excavation Sample Location PE-87

- Original post-excavation sample PE-87 displayed lead above the EPA AOC Cleanup Standard of 1,000 mg/kg. To address this exceedance, approximately 15 cubic yards of additional soil was excavated from either side of original sample location PE-87 [40 feet long by 20 feet wide by an additional 0.5 feet deep] and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, two additional post-excavation samples were collected (one on each side of former sample location PE-87) and these samples were designated PE-87A and PE-87B. Also, three additional surface soil samples were collected around the perimeter of the excavated area defined by original post-excavation sample locations PE-83 through PE-89 and these samples were designated PE-112 through PE-114 (see Figure 12). Sample PE-87B was split with EPA's contractor.
- As shown in Table 9, lead was detected above the EPA AOC Cleanup Standard of 1,000 mg/kg in only post-excavation sample PE-113. To address this exceedance, approximately 44 cubic yards of additional soil was excavated from adjacent to the area [60 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by this former post-excavation sample and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated PE-113A through PE-113D (see Figure 12).
- As shown in Table 9, lead was not detected above its EPA AOC Cleanup Standard in post-excavation samples PE-113A and PE-113B.

Based on the above results, impacted soils in the former Eastern Drainage Swale Area have been properly remediated as EPA's AOC Cleanup Standard for soils of 1,000 mg/kg has been met throughout this area.

Also, in evaluating the results of the analysis of the post-excavation samples collected from Eastern Drainage Swale Area, the data were compared to Act 2 RDC and RSG MSCs. Of the ninety-three samples collected from this area which were used to demonstrate attainment of the EPA AOC Cleanup Standards (samples PE-25, PE-27 through PE-32, PE-33A through 33D, PE-34 through PE-44, A-1 through A-8, B-1 through B-8, PE-83 through PE-86, PE-87A through 87C, PE-88, PE-89, PE-94, PE-95A, PE-96, PE-97, PE-98B, PE-99, PE-100A, PE-101, PE-102, PE-103A, PE-104 through PE-112, PE-113A through D, PE-114 through PE-118, PE-125 through PE-132, PE-133A, PE-134 and PE-140 through PE-144), only five of the samples displayed lead above its Act 2 residential MSCs. Lead was detected above both its Act 2 RSG MSC of 450 mg/kg and Act 2 RSG MSC of 500 mg/kg in samples PE-42 (660 mg/kg), PE-106 (750 mg/kg), PE-112 (590 mg/kg), PE-113B (680 mg/kg) and PE-113C (840 mg/kg). To demonstrate attainment of Act 2 standards, Penn E&R used the 75%/10x rule statistical method described in Section 250.707(b)(1)(i) of the Act 2 regulations. Based on this comparison, a demonstration of attainment of Act 2 residential MSCs can be made for soils in the Eastern Drainage Swale Area as eighty-eight of the ninety-three samples (over 95 percent) collected from this area had lead concentrations below its Act 2 residential MSCs and of the five samples with exceedances none had lead concentrations that exceeded 10X the most stringent of the Act 2 residential MSCs for lead of 450 mg/kg.

### **Eastern Area A**

The location and final limits of Eastern Area A are shown on Figure 7. This area was about 90 feet long by 60 feet wide at its greatest extent and was located just to the east of the Eastern Drainage Swale Area. Eastern Area A was excavated to a depth of between 1.5 feet and 2 feet below the ground surface and about 150 cubic yards of impacted soil was excavated from this area and moved to the berm. After completing remedial activities in this area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling effort, thirteen post-excavation soil samples were collected from this area. These samples were designated PE-69 through PE-77 and PE-90 through PE-93 and were collected at the approximate locations shown on Figure 13. In addition, one blind duplicate (PE-72B) was obtained at sample location PE-72 to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples PE-74, PE-75 and PE-90 were split with EPA's contractor. The post-excavation soil samples and blind duplicates were analyzed for lead by Test America. The results of the analysis of these samples are summarized in Table 10 and a complete copy of the results is included in Appendix I.

A review of Table 10 indicates that lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in only post-excavation sample PE-73. To address this exceedance, approximately 7 cubic yards of additional soil was excavated from adjacent to the area [20 feet long by 20 feet

wide by an additional 0.5 feet deep] encompassed by this former post-excavation sample and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, four additional post-excavation samples, designated PE-73A through PE-73D (see Figure 13), were subsequently collected from this re-excavated area and each was analyzed for lead. As shown in Table 10, lead was not detected above its EPA AOC Cleanup Standard in these four post-excavation samples.

Based on the above results, impacted soils in the former Eastern Area A have been properly remediated as EPA's AOC Cleanup Standard for soils of 1,000 mg/kg has been met throughout this area.

Also, in evaluating the results of the analysis of the post-excavation samples collected from Eastern Area A, the data were compared to Act 2 RDC and RSG MSCs. Of the sixteen samples collected from this area which were used to demonstrate attainment of the EPA AOC Cleanup Standards (samples PE-69 through PE-72, PE-73A through D, PE-74 through 77 and PE-90 through PE-93), only one of the samples displayed lead above its Act 2 residential MSCs. Lead was detected above both its Act 2 RSG MSC of 450 mg/kg and Act 2 RSG MSC of 500 mg/kg in sample PE-77 at a concentration of 690 mg/kg. To demonstrate attainment of Act 2 standards, Penn E&R used the 75%/10x rule statistical method described in Section 250.707(b)(1)(i) of the Act 2 regulations. Based on this comparison, a demonstration of attainment of Act 2 residential MSCs can be made for soils in Eastern Area A as fifteen of the sixteen samples (over 93 percent) collected from this area had lead concentrations below the Act 2 residential MSCs and the lead concentration for the one sample with an exceedance did not exceed 10X the Act 2 residential MSCs for lead.

## **5.2 Pond Sediments**

As indicated earlier, there were four process ponds formerly located on the Site at the approximate locations shown on Figure 5. Based on characterization sampling completed at the Site, as discussed in Section 3.0, lead was detected above its EPA AOC Cleanup Standard for sediments of 550 mg/kg in samples collected from Pond Nos.1 and 3. Therefore, and as discussed in Section 4.0, the sediments in these ponds were excavated and removed and placed in the berm.

As discussed in Section 3.0, with the exception of a single sample collected from Pond No. 2, lead was not detected above its EPA AOC Cleanup Standard in Pond No. 2. The one sample in which lead was detected above its AOC Cleanup Standard in Pond No. 2 was collected by TetraTech/NUS (sample NP-SD-33) and exhibited a lead level of 740 mg/kg. The other sample collected from Pond No. 2 by TetraTech/NUS (sample NP-SD-32) exhibited a lead level of 50.5 mg/kg. Also, the four sediment samples subsequently collected from Pond No. 2 by ARC (samples PS-34-Pond2 shallow and deep and sample PS-35-Pond2 shallow and deep) each displayed lead at less than 100 mg/kg. Given these results and the fact that the average lead level for the Pond No. 2 sediment samples was much less than 550 mg/kg no remediation of the Pond No. 2 sediments was implemented. Also, no remediation of sediments in Pond No. 4 was implemented since the two sediment samples collected from Pond No. 4 by TetraTech/NUS and

the eight sediment samples collected from Pond No. 4 by Penn E&R (see Section 3.0) all displayed lead levels below its EPA AOC Cleanup Standard.

The post-excavation sampling implemented in the ponds upon completion of the remedial activities and the results of these sampling activities are discussed below.

### **Pond No. 1**

The location and limits of the Pond No. 1 remediated area are shown on Figure 7. This area was about 150 feet long by 30 feet wide at its greatest extent and was excavated to a depth of between 3 feet and 4 feet below the ground surface. In all, about 400 cubic yards of sediments were removed from Pond No. 1. After completing remedial activities in the Pond No. 1 area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling, twelve post-excavation sediment samples were collected from the Pond No. 1 excavation. These samples were designated PE-1 through PE-12 and were collected at the approximate locations shown on Figure 14. In addition, a blind duplicate (PE-1A) of sample PE-1 was collected to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples PE-3 and PE-9 were split with EPA's contractor. The post-excavation soil samples and blind duplicate were analyzed for lead by Test America using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 11 and a complete copy of the results is included in Appendix I.

A review of Table 11 indicates lead was not detected above its EPA AOC Cleanup Standard of 550 mg/kg in any of the twelve post-excavation samples collected from the remediated area. Given the results of the post-excavation samples, all sediments remaining in the Pond No. 1 area meet the EPA AOC Cleanup Standard of 550 mg/kg and no further remediation is required. Also, a demonstration of attainment of Act 2 standards can be made using the no exceedance rule as lead was not detected above either its Act 2 RDC MSC or Act 2 RSG MSC in any of the twelve post-excavation samples collected from this area.

### **Pond No. 2**

The limits of former Pond No. 2 are shown on Figure 7. As discussed above and in Section 4.0, no remediation of sediments in Pond No. 2 was required. However, after Oaktree removed sediment from the pond, which was spread on the ground in the area surrounding the pond, Penn E&R collected eleven sediment samples from the Pond No. 2 area. These samples were designated P2-A through P2-J and were collected at the approximate locations shown on Figure 15. In addition, a blind duplicate (P2-K) of sample P2-J was collected to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. The sediment samples were analyzed for lead by Test America using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 12 and a complete copy of the results is included in Appendix I.

A review of Table 12 indicates lead was not detected above its EPA AOC Cleanup Standard of 550 mg/kg in any of the eleven soil samples collected from the Pond No. 2 area. Also, a demonstration of attainment of Act 2 standards can be made using the no exceedance rule as lead was not detected above either its Act 2 RDC MSC or Act 2 RSG MSC in any of the eleven post-excavation samples collected from this area.

### **Pond No. 3**

The location and limits of the Pond No. 3 remediated area are shown on Figure 7. This area was about 120 feet long by 40 feet wide at its greatest extent and was excavated to a depth of between 3 feet and 4 feet below the ground surface. In all, about 400 cubic yards of sediments were removed from Pond No. 3. After completing remedial activities in the Pond No. 1 area, the required post-excavation sampling was performed to comply with the Work Plan and Act 2 attainment requirements.

As part of this sampling, thirteen post-excavation soil samples were collected from the Pond No. 3 excavation. These samples were designated PE-13 through PE-24 and were collected at the approximate locations shown on Figure 16. In addition, a blind duplicate (PE-24A) of sample PE-24 was collected to assess the accuracy and precision of the laboratory and ensure proper decontamination of sampling equipment. Samples PE-16 and PE-18 were split with EPA's contractor. The post-excavation soil samples were analyzed for lead by Test America using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 13 and a complete copy of the results is included in Appendix I.

A review of Table 13 indicates lead was not detected above its EPA AOC Cleanup Standard of 550 mg/kg in any of the thirteen post-excavation samples collected from the remediated area. Given the results of the post-excavation samples, all sediments remaining in the Pond No. 3 area meet the EPA AOC Cleanup Standard of 550 mg/kg and no further remediation is required. Also, a demonstration of attainment of Act 2 standards can be made using the no exceedance rule as lead was not detected above either its Act 2 RDC MSC or Act 2 RSG MSC in any of the thirteen post-excavation samples collected from this area.

### **Pond No. 4**

As discussed in Section 3.0, lead was not detected above its EPA AOC Cleanup Standard for sediments of 550 mg/kg in any of the samples obtained from Pond No. 4. Therefore, no remediation of sediments in this Pond was required. However, this Pond was subsequently reshaped and deepened and forms a portion of the detention basin that is currently located in the southeast corner of the Site.

### **Detention Basin**

There is a detention basin currently located in the southeast corner of the Site at the approximate location shown on Figure 7. As indicated above, no remediation of sediments in Pond No. 4 was required; however, Pond No. 4 was subsequently reshaped and deepened and forms a portion of the detention basin that is currently located in the southeast corner of the Site. The detention

basin was installed as part of Erosion and Sedimentation Controls required at the Site for site development purposes and implementation of the remedial activities. As discussed in Section 4.0 and further below, the detention basin was also used to contain and treat water removed from Pond Nos. 1 and 3 and surface runoff from the Site.

After treating and discharging all water in the detention basin and completion of the on-Site remedial activities, post-excavation samples were collected from the bottom of the detention basin to ensure that sediments in the basin met the EPA AOC Cleanup Standard for lead of 550 mg/kg. As part of this sampling, eight sediment samples were collected from the bottom of detention basin. These samples were designated RB-1 through RB-8 and were collected at the approximate locations shown on Figure 17. The sediment samples were analyzed for lead by Test America using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 14 and a complete copy of the results is included in Appendix I.

A review of Table 14 indicates lead was not detected above its EPA AOC Cleanup Standard of 550 mg/kg in any of the eight sediment samples collected from the detention basin. Given the results of these samples, all sediments remaining in the detention basin meet the EPA AOC Cleanup Standard of 550 mg/kg and no remediation of this area is required. Also, a demonstration of attainment of Act 2 standards can be made using the no exceedance rule as lead was not detected above either its Act 2 RDC MSC or Act 2 RSG MSC in any of the eight post-excavation samples collected from this area.

### **5.3 Verification Sampling of the Stabilized Soil**

As required by the AOC, all soil/sediment that exhibited a lead level above 10,000 mg/kg had to be stabilized to reduce leachable lead levels to below EPA's RCRA regulatory level of 5 mg/l prior to the material being transported to the berm. To stabilize the soils/sediments with lead levels exceeding 10,000 mg/kg, Penn E&R selected and EPA approved for this use EnviroBlend<sup>®</sup>, which is a solid pellet consisting of a varying mixture of magnesium oxide and calcium phosphate. An MSDS sheet for the EnviroBlend<sup>®</sup> is provided in Appendix E. To determine the quantity of EnviroBlend<sup>®</sup> which needed to be mixed with the soil to reduce the leachable lead level to less than 5 mg/l, samples of soil from the Site were mixed with various quantities of EnviroBlend<sup>®</sup> and then the stabilized samples were analyzed for leachable lead. Through this testing it was determined that about 7.5-gallons of EnviroBlend<sup>®</sup> had to be mixed with 3 cubic yards of soil to ensure that the leachable lead level in the resultant stabilized soil was less than 5 mg/l.

As discussed in Section 4.0, as part of the stabilization process, Oaktree excavated the soils with lead levels exceeding 10,000 mg/kg in approximately 200 cubic yards lots. The soil was placed on the concrete building slab located just to the north of the Eastern Drainage Swale Area where the EnviroBlend<sup>®</sup> was then mixed with the soil. The soils were then stabilized in 200 cubic yards lots. After each 200 cubic yard lot was generated, approximately 8 aliquots, each representing approximately 25 cubic yards of soil were collected from the 200 cubic yard lot and composited into one sample representative of the 200 cubic yard lot. In all, ten composite soil samples were collected from the stabilized soils. These samples were designated 200-A to 200-J. Samples 200-A, 200-B, 200-C, 200-D, 200-E, 200-F and 200-H were split with EPA's

contractor. The ten stabilized composite soil samples were submitted to Test America Laboratory for analysis of total lead using EPA Method 6010B and leachable lead using the TCLP test method. The results of the analysis of these samples are summarized in Table 15 and a complete copy of the results is included in Appendix I.

In evaluating the soil stabilization confirmatory sampling results, the leachable lead results were compared to EPA's RCRA regulatory level of 5 mg/l. A review of Table 15 reveals that, with the exception of samples 200-G and 200-H, the leachable lead levels for the samples were all well below the EPA RCRA regulatory level of 5 mg/l. As can be seen from Table 15, samples 200-G and 200-H both initially exhibited a leachable lead level exceeding the EPA RCRA regulatory level of 5 mg/l. Based on these results, the 200 cubic yard lots represented by samples 200-G and 200-H were stabilized again with the Enviroblend<sup>®</sup> following the procedures discussed in Section 4.0. Following re-stabilization, Penn E&R collected another composite soil sample from each 200 cubic yard lot, following the procedures described above. These samples were designated 200-G-2 and 200-H-2 and were analyzed for total and leachable lead. A review of Table 15 shows that the leachable lead levels for the two restabilized soil pile samples (samples 200-G-2 and 200-H-2) were below the EPA RCRA regulatory level. Based on these results, all stabilized soil was relocated and placed in the berm.

Upon completion of the soil stabilization activities, soils on the concrete mixing pad were completely scraped off and then the pad was decontaminated with a high pressure washer. The concrete pad was then removed, broken up and used to backfill adjacent Pond No. 1 after it had been properly remediated. Soils to a depth of 2 feet below the concrete pad were then also excavated and transported to the berm. To evaluate soil conditions beneath this former pad, eight post-excavation soil samples were collected from the excavated area. These samples were designated PE-172 to PE-179 and were collected at the locations shown on Figure 18. The attainment samples were submitted to Test America Laboratory for analysis of total lead using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 16 and a complete copy of the results is included in Appendix I.

A review of Table 16 indicates that lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in post-excavation samples PE-172 and PE-174. To address these exceedances, approximately 7 cubic yards of additional soil was excavated from adjacent to each area [20 feet long by 20 feet wide by an additional 0.5 feet deep] encompassed by former post-excavation samples PE-172 and PE-174 and this soil was moved to the berm. To confirm the effectiveness of these soil excavation activities, one additional post-excavation sample was collected from each of the re-excavated areas, directly beneath each of original post-excavation samples PE-172 and PE-174 and were designated PE-73A and PE-174A, respectively. As shown in Table 16, lead was not detected above its EPA AOC Cleanup Standard in these two post-excavation samples.

Based on the above results, soils located beneath the former concrete mixing pad meet EPA's AOC Cleanup Standard for soils of 1,000 mg/kg and no further remediation of this area is required.

Also, in evaluating the results of the analysis of the post-excavation samples collected from beneath the former mixing area, the data were compared to Act 2 RDC and RSG MSCs. Of the eight samples collected from this area which were used to demonstrate attainment of the EPA AOC Cleanup Standards (samples PE-72A, PE-173, PE-174A and PE-175 through 179), only two of the samples displayed lead above its Act 2 residential MSCs. Lead was detected above both its Act 2 RSG MSC of 450 mg/kg and Act 2 RSG MSC of 500 mg/kg in samples PE-176 (600) and PE-179 (690 mg/kg). To demonstrate attainment of Act 2 standards, Penn E&R used the 75%/10x rule statistical method described in Section 250.707(b)(1)(i) of the Act 2 regulations. Based on this comparison, a demonstration of attainment of Act 2 residential MSCs can be made for soils in the former mixing area as six of the eight samples (75 percent) collected from this area had lead concentrations below its Act 2 residential MSCs and the lead concentration for the two samples with exceedances did not exceed 10X the Act 2 residential MSCs for lead.

#### **5.4 Detention Basin Water Treatment**

Prior to implementing remedial activities in Pond Nos. 1 and 3, it was necessary to drain the water from each pond. As part of this process, Oaktree obtained a temporary discharge permit from the PADEP on October 10, 2006 for the discharge of treated water from the detention basin into swales that drain off-site and then eventually into the West Branch of Neshaminy Creek. A copy of the PADEP approval letter is provided in Appendix D. The primary requirement of the permit was that the water discharged from the detention basin had to be tested to confirm that lead levels were less than 15 ug/l. Based on this approval, the water from Pond Nos. 1 and 3 was discharged into the detention basin. The Detention Basin also accumulated storm water runoff from the Site. The Detention Basin held the accumulated water with the exception of very substantial or prolonged storm events when water overflowed through the emergency spillway and then into the off-site swales.

In March of 2007 after a sufficient quantity of water had accumulated in the detention basin, Penn E&R began treating the water with StormKlear<sup>®</sup>, which is a chitosan based flocculent. The StormKlear<sup>®</sup> was utilized by pumping the Detention Basin water through a chitosan-filled sock and recirculating the water back into the Detention Basin and repeating this process. The chitosan flocculent caused the sediments to settle out of the Detention Basin water. Oaktree pumped water semi-continuously during working hours through the chitosan socks from March 2007 until August 2007. To evaluate the effectiveness of the treatment, Penn E&R collected twenty-six water samples from the basin during this period. These samples were designated BS-5 to BS-25 and the samples were analyzed for total lead. Actually, samples BS-5 and BS-6, BS-7 and BS-8 and BS-9 and BS-10 were collected as sets, with one sample from each set being analyzed for total lead and the other for dissolved lead. The results of the analysis of these samples are summarized in Table 17 and a complete copy of the results is included in Appendix I.

As shown on Table 17, samples B-5 through B-16 displayed total lead levels above the discharge level of 15 ug/l. However, sample BS-17, which was collected on May 24, 2007, exhibited a total lead level below the discharge permit value of 15 ug/l. As a result, Oaktree began discharging Detention Basin water on May 30, 2007, following appropriate notification to the

PADEP. Effluent samples BS-18, BS-19 and BS-20 were collected on May 30, May 31 and June 1, respectively. Since lead levels in these samples were below the discharge permit value of 15 ug/l, discharging of the Detention Basin water continued during this period and discharging ceased on June 1, 2007.

On June 8, 2007, Penn E&R collected sample BS-21, which exhibited a lead result of 14.0 ug/l. When the results were received on June 11, 2007, Penn E&R notified the PADEP of Oaktree's intent to discharge water from the Detention Basin. On June 12, 2007, Oaktree again began discharging Detention Basin water. On June 12, 2007, Penn E&R collected effluent sample BS-22 and on June 14, 2007 Penn E&R received the results of the analysis of this sample, which indicated a lead level of 17.0 ug/l. Oaktree immediately ceased discharge of the Detention Basin water, since the BS-22 lead result exceeded the discharge permit value of 15 ug/l. Penn E&R notified the PADEP that discharging had ceased and treatment of the detention basin water would be resumed until subsequent test results revealed a lead level below 15 ug/l. On August 9, 2007, Penn E&R collected sample BS-23, which had a total lead level of 4.4 ug/l. Since this sample result was below the discharge permit value of 15.0 ug/l Oaktree again resumed the discharge of the Detention Basin water following appropriate notification to the PADEP. Effluent samples BS-24 and BS-25 were collected on August 13 and August 14, 2007, respectively and the total lead results were below the PADEP discharge permit value for each (see Table 17) so Oaktree continued discharging until the Detention Basin was emptied during the week of August 13, 2007. On August 23, 2007, Penn E&R notified the PADEP that the Temporary Discharge Permit was no longer necessary since remedial activities were completed and all impacted soil had been capped in the berm with at least 2-foot of clean soil.

## **5.5 Capped Berm Area**

As discussed in Section 4.0, about 6,700 cubic yards of impacted soil and sediments were excavated at the Site. This material was placed in a berm located along the western property boundary at the location shown on Figure 7. The berm is about 550 feet long, by 50 feet wide by about 15 feet high. The surveyed location, dimensions and limits of the berm, which were obtained pre and post-capping, are shown on Figure 8. Figure 8 also includes surveyed cross-sections of the berm. Once all impacted soil and sediment had been placed in the berm, the berm was capped with at least 2 feet of clean soil. On some areas of the berm and as shown on Figure 8, the soil cap is up to 5 feet thick. The clean soil was obtained from areas on-Site that were not impacted with lead. To confirm this, the areas from which the clean soil for capping the berm was obtained were sampled and the samples analyzed for lead.

As part of this sampling, Penn E&R collected twenty three soil samples from the proposed area from which the clean soil for capping the berm was to be obtained. These samples were designated PE-180 to PE-202 and were collected at the locations shown on Figure 19. These soil samples were submitted to Test America for analysis of total lead using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 18 and a complete copy of the results is included in Appendix I.

A review of Table 18 indicates lead was not detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in any of the twenty three clean soil confirmation samples. Also, the lead

concentration for these samples did not exceed Act 2 residential MSCs. Given these results, the top soil removed from the areas encompassed by confirmation samples PE-180 to PE-202, as approved by EPA was subsequently used to cap the berm.

As part of the capping process, Oaktree excavated the clean soil and staged the soil adjacent to the southeast end of the berm. The outer limits of the berm were marked with 3-foot stakes on all sides to ensure that a sufficient amount of clean soil would be used in the capping process. Once the required clean soil had been stockpiled and all remedial activities had been completed, Oaktree began capping the berm through the combined use of dump trucks, bulldozers and excavators. During the week of July 23, 2007, Oaktree used dump trucks to drive onto the top of the berm to stage piles of clean soil. A bulldozer was used to spread the clean soil along the top of the berm. Once the top portion of the berm was capped, Oaktree used an excavator combined with the dump truck and bulldozer to place the 2 to 3-foot clean soil cover on the sides of the berm during the weeks of July 30, 2007 and August 6, 2007. The dump truck would stage piles of clean soil on the top of the berm, then the bulldozer would move the staged clean soil piles to the area where the excavator was operating and the excavator would place the clean soil onto the sides of the berm.

Once the capping of the berm was completed, Penn E&R along with EPA and TetraTech collected confirmatory soil samples from around the berm to ensure that no impacted soil had migrated with storm water and/or was tracked outside the limits of the capped berm area. As part of this sampling, fourteen confirmatory soil samples were collected around the perimeter of the capped berm. These samples were designated CS-1 through CS-14 and were collected at the approximate locations shown on Figure 19. Samples CS-1, CS-5, CS-8 and CS-12 were split with EPA's contractor. The fourteen confirmatory soil samples were analyzed for lead by Test America using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 19 and a complete copy of the results is included in Appendix I.

A review of Table 19 indicates lead was detected above its EPA AOC Cleanup Standard of 1,000 mg/kg in two of the fourteen confirmatory soil samples, samples CS-3 and CS-10.

To address these exceedance, approximately 11 cubic yards of soil was excavated [15 feet long by 10 feet wide by 1.5 feet to 2 feet deep] from the area encompassed by former confirmatory sample location CS-3. To confirm the effectiveness of these soil excavation activities, ten additional post-excavation samples were subsequently collected from this re-excavated area and these samples were designated CS-3A through CS-3J (see Figure 19). As shown in Table 19, lead was not detected above its EPA AOC Cleanup Standard in samples CS-3A through CS-3J. To address the exceedance at sample location CS-10, approximately 37 cubic yards of soil was excavated [50 feet long by 10 feet wide by 1.5 feet to 2 feet deep] from the area encompassed by former confirmatory sample CS-10. To confirm the effectiveness of these soil excavation activities, eight additional post-excavation samples were subsequently collected from this excavated area and these samples were designated CS-10A through CS-10H (see Figure 19). As shown in Table 19, lead was not detected above its EPA AOC Cleanup Standard in Samples CS-10A through CS-10H. The soils excavated from the CS-3 and CS-10 areas were transported via dump truck to the berm. The excavated soils were added to the southwest corner of the berm which had been previously capped with clean soil. After the additional excavated soils had been

placed in the berm, the southwest end of the berm was capped again with an additional 2 feet to 3-feet of clean soil creating the toe of the southwest corner of the berm.

To confirm that at least 2 feet of clean soil had been used to cap the west side of the berm and, at the request of EPA, Oaktree excavated six test pits, at 50 foot intervals, along the entire northwestern side of the berm. The test pits were designated TB-1 through TB-6 and were installed at the approximate location shown on Figure 19. The test pits were excavated 36-inches into and perpendicular with the face of the berm. Penn E&R, along with EPA and TetraTech, then collected a soil sample from each test pit to confirm that at least 2-foot of clean soil was present at each location. As part of this sampling, one soil sample was collected from 2 feet to 2.5 feet into the face of the berm at each test pit location. These samples were designated TB-1 through TB-6, and sample TB-2 was split with EPA's contractor. The six confirmatory soil samples were submitted to Test America Laboratory for analysis of total lead using EPA Method 6010B. The results of the analysis of these samples are summarized in Table 19 and a complete copy of the results is included in Appendix I. A review of Table 19 indicates lead was not detected above its EPA AOC Cleanup Standard of 1,000 mg/kg or its Act 2 non-residential MSCs in any of the six test pit samples, confirming that the cap of clean soil placed over the berm is at least 2-foot thick.

After the clean soil berm cap was confirmed, Oaktree hydroseeded the berm. The hydroseeding was performed from October 22, 2007 to November 13, 2007 to develop vegetation on the berm surface. Oaktree mixed water, seed and protective mulch in a tank and sprayed the hydroseeding mixture on the berm surface to maintain the slope and cap of the berm. As indicated in Section 7.0, an Operation and Maintenance Plan has been developed and will be followed to ensure the integrity of the cap is maintained.

## **6.0 INSTITUTIONAL CONTROL PLAN**

### **6.1 Overview**

As discussed in Sections 4.0 and 5.0, about 6,700 cubic yards of lead impacted soil and sediment was excavated, stabilized (if required), and then relocated and capped in a berm constructed along the western boundary of the Site (see Figures 7 and 8). The required post-excavation/attainment soil sampling was subsequently implemented in the remediated areas. Based on the results of these sampling activities, all lead impacted soil and sediment has been remediated and remaining soils and sediments located outside the footprint of the berm meet the EPA AOC Cleanup Standards established for the Site for lead in soils of 1,000 mg/kg and for lead in sediments of 550 mg/kg. Also, remaining soils and sediments located outside the footprint of the berm meet Act 2 residential MSCs for lead.

This Section of the report provides a summary of the activity and use limitations (AULs) that will be required on the portion of the Site where the berm is located and for ground water. The process for creating, documenting and ensuring that the AULs are enforced is outlined in the Environmental Covenant, included in Appendix J, which has been approved by EPA and was filed with the Montgomery County Recorder of Deeds Office on January 20, 2009.

A summary of the AULs for soils and ground water at the Site is provided below.

### **6.2 Activity & Use Limitations**

#### **Soils**

The lead concentrations of the soils/sediments placed in the berm range from about 550 mg/kg to over 10,000 mg/kg. Any soil/sediment which had a lead content exceeding 10,000 mg/kg was first stabilized prior to being placed in the berm. As can be seen from Figures 7 and 8, the berm is about 550 feet long, by 50 feet wide by about 15 feet high. The surveyed location, dimension and limit of the berm, which were obtained pre and post-capping, are shown on Figure 8. Figure 8 also includes surveyed cross-sections of the berm. As discussed in Section 5.0, the entire berm was capped with at least 2 feet of soil that meets the EPA AOC Cleanup Standard and Act 2 non-residential direct contact MSCs. In fact, the berm is covered with upwards of 3 feet of soil that meets the aforementioned standards along the northwest side and 7 feet of soil that meets the aforementioned standards along the southeast side. The soil used to install the cap was obtained from areas on the Site that were not impacted with lead.

As discussed in Section 5.0 and to confirm the effectiveness of the remedial activities, post-excavation soil samples were collected from the remediated areas located outside the footprint of the berm. Lead was not detected above the EPA AOC Cleanup Standards or Act 2 residential statewide health standards in any of the post-excavation soil samples used to confirm the effectiveness of the remedial activities. Since all soils located outside the limits/footprint of the berm meet applicable Act 2 residential statewide health standards, no AULs are required to be placed on these areas.

The soils used to cap the berm meet EPA AOC Cleanup Standards and Act2 non-residential MSCs. However, lead impacted soil is present in the berm at levels exceeding both of these standards. Therefore, the following activity and use limitations will apply to the portion of the Site encompassed by the footprint of the berm:

1. The area encompassed by the berm is not to be used for any purpose.
2. The soil cap and vegetative soil cover on the berm must be maintained as discussed in Section 7.0.
3. Any damage to the cap on the berm must be repaired immediately as discussed in Section 7.0. The cap will be assumed to have been compromised if there is any missing soil from an area larger than 1-foot by 1-foot extending 6-inches or deeper into the cap. If damage to the berm is identified, it shall be immediately repaired to bring the impacted area back to its original capped condition.
4. With the exception of minor repairs that may be required to maintain the integrity of the berm, as indicated above, no modification to the berm in any way, including the removal of any soil from the berm is allowed unless approval from EPA is first obtained.
5. As discussed in Section 7.0, the berm will be inspected quarterly for the first two years after its date of installation and then semiannually thereafter. The primary objective of these inspections will be to ensure the integrity of the cap over the berm has not been compromised in any way.
6. Inspection reports will be provided to EPA and PADEP within 60-days of the end of each calendar year. The reports will include all observations made during the inspections and a description of any repairs that were implemented.

### **Ground Water**

As discussed in Section 3.0 and based on the results of a water sample collected from a supply well located on the Site in May 2007, ground water beneath the Site appears to be impacted. However, EPA did not identify any on-Site primary source areas for this impact or for ground water impacts associated with the off-site portions of the North Penn Area 2 Superfund site. Therefore, Oaktree was not required to do anything further with regards to ground water impacts present beneath the Site.

There is one water supply well present at the Site. This well is located within/adjacent to the small office building located in the north central portion of the Site. The well is only connected to the office building, which is currently vacant. With the exception of the use of the restrooms in the office building, this building is not presently being used for any purpose. Oaktree personnel and the two tenants in one of the other on-Site buildings are the only people who have a key to access the office building. The lease with the tenants at the Site indicates that the water from the supply well is potentially impacted and is not to be used for potable purposes. Oaktree personnel have also been made aware that water from the well is not to be used for potable purposes. Signs have been placed over all faucets in the office building that are connected to the water supply well indicating that the water should not be used for potable purposes and all subcontractors who may work at the Site from time to time are also notified and will be continued to be notified that the well is potentially impacted and the water is not to be used for potable purposes.

Oaktree plans to continue to use the well since it supplies water to the restrooms in the office building, which are the only restrooms located on the Site. These restrooms will also be required by the on-Site tenants and they will be required during future site development activities. Also, Oaktree plans to use the water during future site development activities. The development to be constructed at the Site will be connected to public water. Therefore, after completion of the development of the Site, expected to be in December, 2015, the water supply well will be abandoned and properly sealed in accordance with all local, state and federal regulations. The EPA and PADEP have approved the use of the well for non-potable purposes during the development of the Site.

The May 2007 sample results revealed the compound 1,1-dichloroethene to be present in the ground water at a concentration of 15.7 ug/l. Although this concentration exceeds its Maximum Contaminant Level of 7 ug/l used by both the EPA and PADEP, it does not exceed its Act 2 volatilization to indoor air screening level of 160,000 ug/l developed by PADEP. Therefore, the only potential open pathway on the Site with regards to ground water is ingestion. Given this, the following activity and use limitations shall apply for ground water at the Site:

1. The existing on-site supply well will be sealed after site development has been completed. A PADEP well abandonment form will be submitted to EPA and PADEP once the well has been sealed.
2. No new wells can be installed at the Site.
3. Ground water at the Site can not be used for any purpose.

## **7.0 OPERATIONS AND MAINTENANCE PLAN**

As discussed in earlier Sections of this report, about 6,700-cubic yards of lead impacted soil was placed in a berm located along the western boundary of the Site. As can be seen from Figures 7 and 8, the berm in which the lead impacted soil was placed is about 550 feet long, by 50 feet wide by about 15 feet high. As discussed in Section 5.0, the entire berm was capped with at least 2 feet of soil that meets the EPA AOC cleanup standard and Act 2 non-residential direct contact MSCs. In fact, most of the berm is covered with over 3 feet of soil that meets the aforementioned standards. The soil used to install the cap was obtained from areas on the Site that were not impacted with lead. Once installed, the clean soil cap covering the berm was mulched and seeded.

This Section of the report includes an Operations and Maintenance Plan (O&M) that will be followed by the current and all subsequent owners of the Site in performing post-closure inspection and maintenance of the vegetative soil cover placed over the berm.

### **7.1 Vegetative Soil Cover Layers**

#### **7.1.1 Components**

The vegetative soil cover at the berm consists of the following layers from bottom to top as depicted on Figure 8:

- At least 2 feet of clean soil was used to cap the lead impacted soil placed in the berm. The soil comprising the cap consists of silty clay and was obtained from areas on-Site that were not impacted with lead.
- The soil cap was seeded and mulched so there is a vegetative layer of grass covering the soil cap.

#### **7.1.2 Monitoring and Inspection**

Monitoring and inspection of the vegetative soil cover at the berm will be performed quarterly for the first two years of the post-closure care period beginning on August 1, 2008, and semi-annually for the remaining period. The vegetative soil cover will be inspected for erosion, differential settling, coverage of vegetation, and evidence of burrowing animals (such as holes in the ground).

#### **7.1.3 Maintenance**

The vegetative soil cover at the berm will require regular maintenance for soil erosion resulting from rain, snow, wind, and other natural factors. The erosion of soil covered areas will be repaired by replacement of appropriate soil material. Also, any holes created by burrowing animals and any settlement depressions will be filled with clean soil and soded. The other regular maintenance activities including cleaning of drainage areas and maintenance of vegetation are addressed in individual divisions of this manual. The cap will be assumed to have

been compromised, and repairs implemented if there is any missing soil from an area larger than 1-foot by 1-foot extending 6-inches or deeper into the cap

## **7.2 Storm Water Drainage System**

### **7.2.1 System Components**

The existing storm water drainage system consists of grass lined drainage swales along the perimeter of the berm.

### **7.2.2 Monitoring and Inspection**

All storm water controls will be inspected quarterly for the first two years of the post-closure care period, and semiannually for the remaining period. Inspections will generally occur during the non-winter months to provide a better evaluation of the storm water controls and after a significant precipitation event (i.e., 1-inch or greater). The inspections will be implemented within a 48-hour period after a significant precipitation event has occurred. The inspections will consist of visual checking for sediment accumulation, subsidence, ponding, obstructions to flow, erosion, and vegetative growth which could prevent the free flow of storm water.

### **7.2.3 Maintenance**

Accumulated sediment and vegetative growth that is obstructing the flow of storm water will be removed from the drainage swales and spread over the surrounding upland areas. Areas of the storm drainage system where water is ponding will be regraded to promote positive drainage. Any damage to the storm water control structures due to subsidence or erosion will be repaired as soon as possible. Although we expect maintenance of the swales to be minimal, the degree of the maintenance activities will depend on the extent of damage to the storm water drainage system.

## **7.3 Vegetation**

### **7.3.1 System Components**

The revegetation at the berm has been completed. The revegetation was performed to control erosion of the soil cover at the berm and to return the area to its natural state. The revegetation on the soil cover included hydroseeding with grasses native to the area.

### **7.3.2 Monitoring and Inspection**

The coverage and maintenance of vegetation on the soil cover will be visually inspected quarterly for the first two years of the post-closure care period and semiannually thereafter (early spring and late fall). Any trees and shrubs planned as part of site development will be inspected at the same frequency. All areas requiring maintenance activities such as mowing, watering, hydroseeding, mulching, and re-planting will be noted during the inspection, and the work will be performed shortly thereafter.

### 7.3.3 Maintenance

The vegetative soil cover will be mowed annually in the early fall (September – October) to prevent the overgrowth of the open areas by woody plants. Any woody plants identified during inspections will be removed immediately. The mower blades will be sharp to prevent tearing and set at a height where only 1/3 of the existing grass blade is cut. Mulch/grass clippings will remain. The need for additional mowing will be determined and implemented as noted during the routine inspections. As required, additional seeding will be implemented whenever additional soil is added to the berm, otherwise seeding will occur between April 15 and May 15, or between September 15 and October 15.

## 7.4 Recordkeeping, Reporting and Monitoring

### 7.4.1 System Components

The repair, maintenance and monitoring records will be kept at least thirty-years after the date that record/document was generated. The records will be maintained in the Administrative Records at the Oaktree Industrial Associates office located in Hatfield, PA and/or in the offices of subsequent owners. The records and reports to be developed and kept are listed below.

NO.	DESCRIPTION <sup>(1)</sup>	TO AGENCY	INTERNAL
1.	<b>Facility Inspection Report</b> 1. Vegetative Soil Cover Inspection 2. Storm Drainage System Inspection 3. Vegetative Inspection	Yes Yes Yes	Yes Yes Yes
2.	<b>Maintenance and Repair Records</b> 1. Vegetative Soil Cover Maintenance and Repair Records 2. Storm Drainage System Maintenance and Repair Records 3. Vegetation Replanting and Maintenance Records	Yes Yes Yes	Yes Yes Yes

<sup>(1)</sup> The Facility Inspection Report and Maintenance and Repair Records will be submitted as a combined report.

The reports shall, at a minimum, include the following information:

#### **Facility Inspection Report**

1. Site Name
2. Date and Time of Inspection
3. Inspector's Name

4. Summary of Inspection of Vegetative Soil Cover
5. Summary of Inspection of Storm Drainage System
6. Summary of Vegetative Inspection
7. List Maintenance Required (If Any)
8. Next Scheduled Inspection Date

### **Maintenance and Repair Records**

1. Site Name
2. Date and Time of Maintenance/Repair Activity
3. Name of Person(s) Performing Maintenance/Repair
4. Summary of Maintenance/Repair Activity
  - Include Sufficient Detail Describing the Maintenance/Repair Activity
  - Include Site Diagram Showing Area of Berm Requiring Maintenance/Repair
5. Next Inspection Date

## **7.4.2 Reporting**

### Reporting to the Regulatory Agencies

A combined copy of the aforementioned Facility Inspection and Maintenance and Repair Records, reports will be submitted to both PADEP and the EPA. These submittals will be distributed to PADEP (2 copies) and the EPA (3 copies) within 60 days from the date of the activity.

### Internal Reporting

The inspection reports will be distributed within one week from the date of inspection. The monitoring reports, maintenance and repair records and the survey reports will be distributed within 30 days from the date of completion of an activity.

### Distribution Addresses

Pennsylvania Department of Environmental Protection (PADEP)  
2 East Main Street  
Norristown, PA 19401-4915  
ATTN: D. Armstrong

United States Environmental Protection Agency Region III  
1650 Arch Street  
Philadelphia, PA 19107  
ATTN: S. Fang

Oaktree Industrial Associates  
2880 Bergey Road  
Hatfield, PA 19440  
ATTN: R. Altemose

### **7.4.3 Frequency of Monitoring**

The site-specific monitoring frequencies for each activity are discussed in individual sections. The frequency of monitoring and inspection are summarized below:

MAINTENANCE AND MONITORING	FREQUENCY
1. Inspection of Vegetative Soil Cover	Quarterly during the first two years and semiannually thereafter. (Yearly for Settlement)
2. Inspection of Storm Drainage System	Quarterly during the first two years and semiannually thereafter.
3. Vegetation Inspection	Quarterly during the first two years and semiannually thereafter.
4. Vegetation Maintenance	Mowing once in early fall each year.

## 8.0 CONCLUSIONS

On June 3, 2005, Oaktree and EPA entered into an AOC for the removal response action at the former Steiert facility. The AOC required, among other things, that Oaktree remediate the lead impacted soils and sediments identified on the former Steiert property. The on-site remediation of the lead impacted soil and sediment required by the AOC has been completed.

In all, about 6,700 cubic yards of lead impacted soil and sediment was excavated, stabilized (if required) and then relocated and capped in a berm constructed along the western property line. The required post-excavation/attainment soil sampling was subsequently implemented in the remediated areas. Based on the results of these sampling activities, all lead impacted soil and sediment has been remediated and remaining soils and sediments located outside the footprint of the berm meet EPA AOC Cleanup Standards for lead in soils of 1,000 mg/kg and in sediments of 550 mg/kg. Also, remaining soils and sediments located outside the footprint of the berm meet residential Act 2 direct contact and soil-to-ground water MSCs for lead of 500 mg/kg and 450 mg/kg, respectively developed by the PADEP.

To eliminate direct contact with the impacted soil/sediment placed in the berm, the berm was subsequently capped with at least 2-foot of clean soil. The Institutional Control Plan developed for the Site includes the use of a deed restriction in the form of an Environmental Covenant to ensure that all subsequent property owners are aware of the presence, location, limit, and content of the berm, and the activity and use limitation, for the area encompassed by the berm. The Environmental Covenant is intended to remain with the property for perpetuity and will be transferred to each new property owner each time the property is transferred. The Environmental Covenant and associated activity and USP limitations will only apply to the on-Site area encompassed by the berm and no other areas as all remaining soils at the Site meet applicable EPA AOC Cleanup Standards and Act 2 residential statewide health standards and no use restriction for these soils is required. Additionally, an Operations and Maintenance Plan has been developed and will be followed to ensure the integrity of the cap is maintained.

Also, although volatile organic compounds at levels exceeding drinking water standards were detected in the on-site supply well, which is currently only being used for non-potable purposes, no on-Site sources were identified and the Site was determined not to be a primary source for ground water impacts present in the North Penn Area 2 Superfund Site. Therefore, no further investigation or remediation of the on-Site ground water was required by EPA. The Environmental Covenant also outlines activity and use limitations that will apply to ground water at the Site.

Based on the results of the on-site remedial activities and previous work completed by EPA and others, all lead impacted soil/sediment has been properly remediated and there is an Environmental Covenant in-place that outlines applicable activity and use limitations for soils and ground water and an Operations and Maintenance Plan to ensure the cap over the berm is maintained. Therefore, no further investigation or remediation of soil and/or ground water is required and the requirements of the AOC have been satisfied.

## 9.0 REFERENCES

This Section of the report includes a list of the References from Remedial Action Completion/Final Report.

1. Alexander, Alexis K. "North Penn 2 – Steiert Property Removal Action – Comments on Removal Action Work Plan, ARC Project No. 02207-001, April 2004" May 2004
2. American Resource Consultants, Inc., "Revised Removal Action Workplan Addendum: A. Steiert & Sons, Inc., Bergey Road, Hatfield, Montgomery County, PA 19440" May 2005
3. (b) (4) P.G. – Vice President, Penn Environmental & Remediation, Inc. "Remediation of the Former Steiert Facility – Soil Delineation Sampling and Remediation Site Plan, Remediation of Lead Impacted Soils/Sediment, Erosion and Sedimentation Control Plan, Remediation Schedule," September 2006
4. (b) (4) P.G. – Vice President, Penn Environmental & Remediation, Inc. "Former Steiert Facility – Site Remediation Project – Site Specific Health & Safety Plan" September 2006
5. Cinti, Thomas A. – Senior Assistant Regional Counsel, U.S. Environmental Protection Agency, Region III "North Penn Area 2 Superfund Site/Steiert Property" June 2005
6. Fields, Jenifer, P.E. – Regional Manager, Water Management, PADEP "Temporary Discharge Request" October 2006
7. Magid Glove and Safety Manufacturing Company "Willson SAF-T-FIT Disposable Respirators" 2006-2007
8. Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium Specific Concentrations, November 2001.
9. Rowell, J.E. "Material Safety Data Sheet No. 2650 – Premier Chemicals, Enviroblend" January 2005
10. Walsh, Donald S. – Regional Administrator, U.S. Environmental Protection Agency, Region III "Administrative Order by Consent for Removal Response Action and Release and Waiver of Lien" June 2005

## 10.0 CERTIFICATIONS

As required by Section XXII of the AOC, the following completed and signed certification is provided.

I certify that the information contained in or accompanying this Remedial Action Completion/Final Report for the Removal Response Action implemented at the North Penn Area 2 Superfund Site - Steiert Facility is true, accurate and complete.

I am aware that there are significant penalties for submitting false information including the possibility of fines and imprisonment for knowing violations.

Name: Oak Tree Industrial Associates, LP  
BY: Oak Tree Industrial Corp, GP

Signature:

 Pres. 7/23/09  
Roger D. Antemose

Title: President

## **TABLES**

TABLE 1

SUMMARY OF LEAD RESULTS FOR SOIL AND SEDIMENT SAMPLES  
COLLECTED BY OTHERS IN JULY, 2002  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>	Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
PS-1	0-0.5	344	PS-17	0-0.5	46.5
PS-1D	0.5-1	263	PS-17D	0.5-1	24.6
PS-2 <sup>(3)</sup>	0-0.5	745	PS-18	0-0.5	40.3
PS-2D <sup>(3)</sup>	0.5-1	550	PS-18D	0.5-1	21.8
PS-3 <sup>(3)</sup>	0-0.5	<b>46,000</b>	PS-19	0-0.5	<b>30,900</b>
PS-3D	0.5-1	<b>32,000</b>	PS-20	0-0.5	360
PS-4	0-0.5	<b>2,320</b>	PS-20D	0.5-1	135
PS-4D <sup>(3)</sup>	0.5-1	<b>1,680</b>	PS-21	0-0.5	121
PS-5 <sup>(3)</sup>	0-0.5	<b>3,400</b>	PS-21D	0.5-1	49
PS-5D <sup>(3)</sup>	0.5-1	562	PS-22	0-0.5	116
PS-6 <sup>(3)</sup>	0-0.5	<b>4,730</b>	PS-22D	0.5-1	31.8
PS-6D <sup>(3)</sup>	0.5-1	<b>2,510</b>	PS-23	0-0.5	105
PS-7	0-0.5	351	PS-23D	0.5-1	63.9
PS-7D	0.5-1	30.9	PS-24	0-0.5	880
PS-8 <sup>(3)</sup>	0-0.5	<b>1,610</b>	PS-24D	0.5-1	150
PS-8D	0.5-1	271	PS-25	0-0.5	<b>114,000</b>
PS-9	0-0.5	303	PS-26	0-0.5	<b>30,000</b>
PS-9D	0.5-1	65.7	PS-29	0-0.5	140
PS-10	0-0.5	123	PS-29D	0.5-1	135
PS-10D	0.5-1	65.1	PS-30	0-0.5	158
PS-11	0-0.5	52.6	PS-30D	0.5-1	166
PS-11D	0.5-1	44.5	PS-31	0-0.5	134
PS-12	0-0.5	138	PS-31D	0.5-1	49
PS-13	0-0.5	57.3	PS-32	0-0.5	<b>20,600</b>
PS-14	0-0.5	297	PS-32D	0.5-1	<b>2,140</b>
PS-14D	0.5-1	239	PS-33	0-0.5	<b>3,330</b>
PS-15	0-0.5	144	PS-33D	0.5-1	229
PS-15D	0.5-1	82.6	PS-34-Pond 2	0-0.5	81
PS-16	0-0.5	58.9	PS-34D-Pond 2	0.5-1	50.7
PS-16D	0.5-1	20.9	PS-35-Pond 2	0-0.5	59.2
EPA Cleanup Level <sup>(4)</sup>		1,000/550	EPA Cleanup Level <sup>(4)</sup>		1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface for the soil samples and in feet below the bottom of the pond/drainage swale for the sediment samples.
- (2) - Sample Results are in milligrams per kilogram.
- (3) - These are sediment samples that were collected from on-site drainage swales/Ponds and in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- (4) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA For the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard is for soils and the 550 mg/kg standard is for sediments.

**46,000** Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.

**Bold -** Lead was detected at or above its EPA Cleanup Level.

TABLE 1 (Continued)

SUMMARY OF LEAD RESULTS FOR SOIL AND SEDIMENT SAMPLES  
COLLECTED BY OTHERS IN JULY, 2002  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>	Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
PS-35D-Pond 2	0.5-1	71.3	PS-50D <sup>(3)</sup>	0.5-1	1,710
PS-36	0-0.5	86	PS-51 <sup>(3)</sup>	0-0.5	1,130
PS-36D	0.5-1	50.6	PS-51D <sup>(3)</sup>	0.5-1	466
PS-37-Pond 3 <sup>(3)</sup>	0-0.5	1,490	PS-52 <sup>(3)</sup>	0-0.5	8,700
PS-37D-Pond 3 <sup>(3)</sup>	0.5-1	3,480	PS-52D <sup>(3)</sup>	0.5-1	2,360
PS-38-Pond 3	0-0.5	83.9	PS-53 <sup>(3)</sup>	0-0.5	17,800
PS-38D-Pond 3	0.5-1	30.6	PS-53D <sup>(3)</sup>	0.5-1	4,080
PS-39 <sup>(3)</sup>	0-0.5	1,480	PS-54 <sup>(3)</sup>	0-0.5	17,200
PS-39D	0.5-1	25.2	PS-54D <sup>(3)</sup>	0.5-1	6,510
PS-40 <sup>(3)</sup>	0-0.5	670	PS-55 <sup>(3)</sup>	0-0.5	35,000
PS-40D	0.5-1	258	PS-55D <sup>(3)</sup>	0.5-1	2,680
PS-41 <sup>(3)</sup>	0-0.5	5,000	PS-56 <sup>(3)</sup>	0-0.5	7,150
PS-41D	0.5-1	97.9	PS-56D <sup>(3)</sup>	0.5-1	922
PS-42 <sup>(3)</sup>	0-0.5	5,820	PS-57 <sup>(3)</sup>	0-0.5	2,810
PS-42D <sup>(3)</sup>	0.5-1	2,100	PS-57D <sup>(3)</sup>	0.5-1	617
PS-43 <sup>(3)</sup>	0-0.5	9,830	PS-58	0-0.5	344
PS-43D <sup>(3)</sup>	0.5-1	1,940	PS-58D	0.5-1	45.1
PS-44 <sup>(3)</sup>	0-0.5	8,800	PS-59 <sup>(3)</sup>	0-0.5	14,000
PS-44D <sup>(3)</sup>	0.5-1	2,900	PS-59D <sup>(3)</sup>	0.5-1	16,900
PS-45 <sup>(3)</sup>	0-0.5	9,880	PS-60 <sup>(3)</sup>	0-0.5	5,290
PS-45D	0.5-1	36.6	PS-61 <sup>(3)</sup>	0-0.5	53,100
PS-46 <sup>(3)</sup>	0-0.5	12,600	PS-62 <sup>(3)</sup>	0-0.5	48,400
PS-46D <sup>(3)</sup>	0.5-1	887	PS-63 <sup>(3)</sup>	0-0.5	25,000
PS-47 <sup>(3)</sup>	0-0.5	9,140	PS-64 <sup>(3)</sup>	0-0.5	5,100
PS-47D <sup>(3)</sup>	0.5-1	8,700	PS-65	0-0.5	115
PS-48 <sup>(3)</sup>	0-0.5	3,010	PS-65D	0.5-1	112
PS-48D <sup>(3)</sup>	0.5-1	3,630	PS-66	0-0.5	99.1
PS-49 <sup>(3)</sup>	0-0.5	3,750	PS-66D	0.5-1	80.7
PS-49D	0.5-1	103	PS-67	0-0.5	113
PS-50 <sup>(3)</sup>	0-0.5	3,760	PS-67D	0.5-1	34.4
EPA Cleanup Level <sup>(4)</sup>		1,000/550	EPA Cleanup Level <sup>(4)</sup>		1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface for the soil samples and in feet below the bottom of the pond/drainage swale for the sediment samples.
- (2) - Sample Results are in milligrams per kilogram.
- (3) - These are sediment samples that were collected from on-site drainage swales/Ponds and in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- (4) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA For the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard is for soils and the 550 mg/kg standard is for sediments.
- 46,000** - Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.
- Bold -** Lead was detected at or above its EPA Cleanup Level.

TABLE 1 (Continued)

SUMMARY OF LEAD RESULTS FOR SOIL AND SEDIMENT SAMPLES  
COLLECTED BY OTHERS IN JULY, 2002  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>	Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
PS-68	0-0.5	128	PS-74 <sup>(3)</sup>	0-0.5	7,210
PS-68D	0.5-1	49.9	PS-74D <sup>(3)</sup>	0.5-1	1,650
PS-69 <sup>(3)</sup>	0-0.5	2,200	PS-75 <sup>(3)</sup>	0-0.5	2,270
PS-69D	0.5-1	54.5	PS-75D <sup>(3)</sup>	0.5-1	689
PS-70 <sup>(3)</sup>	0-0.5	7,580	PS-76 <sup>(3)</sup>	0-0.5	2,330
PS-70D <sup>(3)</sup>	0.5-1	588	PS-76D <sup>(3)</sup>	0.5-1	1,080
PS-71 <sup>(3)</sup>	0-0.5	1,350	PS-77 <sup>(3)</sup>	0-0.5	644
PS-71D	0.5-1	84.5	PS-77D	0.5-1	106
PS-72 <sup>(3)</sup>	0-0.5	7,080	PS-78 <sup>(3)</sup>	0-0.5	6,010
PS-72D	0.5-1	95.7	PS-78D <sup>(3)</sup>	0.5-1	856
PS-73 <sup>(3)</sup>	0-0.5	1,180	PS-79 <sup>(3)</sup>	0-0.5	10,000
PS-73D	0.5-1	44.6			
EPA Cleanup Level <sup>(4)</sup>		1,000/550	EPA Cleanup Level <sup>(4)</sup>		1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface for the soil samples and in feet below the bottom of the pond/drainage swale for the sediment samples.
- (2) - Sample Results are in milligrams per kilogram.
- (3) - These are sediment samples that were collected from on-site drainage swales/Ponds and in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- (4) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA For the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard is for soils and the 550 mg/kg standard is for sediments.
- 46,000** - Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.
- Bold -** Lead was detected at or above its EPA Cleanup Level.

TABLE 2

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR SOIL DELINEATION SAMPLES  
COLLECTED BY PENN E&R IN JUNE/JULY 2006  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-1	0-0.5	120
S-2	0-0.5	750
S-2-D	0.5-1	23
S-3	0-0.5	190
S-4	0-0.5	67
S-4-D	0.5-1	19
S-5	0-0.5	45
S-6	0-0.5	120
S-6-D	0.5-1	15
S-7	0-0.5	46
S-8	0-0.5	53
S-8-D	0.5-1	18
S-9	0-0.5	24
S-9-A/Dup. of S-9	0-0.5	31
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-10	0-0.5	27
S-10-D	0.5-1	9.3
S-11	0-0.5	32
S-12	0-0.5	41
S-12-D	0.5-1	13
S-13	0-0.5	21
S-14	0-0.5	54
S-14-D	0.5-1	13
S-15	0-0.5	31
S-16	0-0.5	32
S-16-D	0.5-1	13
S-17	0-0.5	47
S-18	0-0.5	72
S-18-D	0.5-1	19
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-19	0-0.5	350
S-20	0-0.5	78
S-20-D	0.5-1	15
S-21	0-0.5	39
S-22	0-0.5	60
S-22-D	0.5-1	18
S-23	0-0.5	84
S-23-A/Dup. of S-23	0-0.5	74
S-24	0-0.5	160
S-24-D	0.5-1	11
S-25	0-0.5	130
S-26	0-0.5	39
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-26-D	0.5-1	23
S-27	0-0.5	150
S-28	0-0.5	520
S-28-D	0.5-1	74
S-29	0-0.5	58
S-30	0-0.5	<b>1,000</b>
S-30-D	0.5-1	54
S-31	0-0.5	130
S-31-A/Dup. of S-31	0-0.5	130
S-32	0-0.5	300
S-32-D	0.5-1	72
S-33	0-0.5	40
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface.
- (2) - Sample results are in milligrams per kilogram (mg/kg).
- (3) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA for the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard applies to soils and the 550 mg/kg standard is for sediments.
- (4) - These are sediment samples that were collected from on-site drainage swales/ponds in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- 29,000** - Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.
- Bold** - Lead was detected at or above its EPA Cleanup Level.

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR SOIL DELINEATION SAMPLES  
COLLECTED BY PENN E&R IN JUNE/JULY 2006  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-34	0-0.5	5,000
S-35	0-0.5	6,900
S-36	0-0.5	3,600
S-37	0-0.5	4,400
S-38	0-0.5	3,400
S-39	0-0.5	1,600
S-40	0-0.5	3,200
S-41	0-0.5	6,900
S-42	0-0.5	1,100
S-43	0-0.5	2,900
S-44	0-0.5	4,200
S-45	0-0.5	250
S-45-A Dup. of S-45	0-0.5	240
S-46	0-0.5	1,100
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-47	0-0.5	3,900
S-48	0-0.5	5,600
S-49 <sup>(4)</sup>	0-0.5	810
S-50	0-0.5	<b>36,000</b>
S-51	0-0.5	510
S-52	0-0.5	36
S-53	0-0.5	100
S-54 <sup>(4)</sup>	0-0.5	1,100
S-55 <sup>(4)</sup>	0-0.5	730
S-56	0-0.5	240
S-57	0-0.5	170
S-57-A Dup. of S-57	0-0.5	180
S-58	0-0.5	94
S-59	0-0.5	470
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-60 <sup>(4)</sup>	0-0.5	840
S-61 <sup>(4)</sup>	0-0.5	880
S-62	0-0.5	86
S-63	0-0.5	61
S-64 <sup>(4)</sup>	0-0.5	4,200
S-65 <sup>(4)</sup>	0-0.5	1,100
S-66 <sup>(4)</sup>	0-0.5	3,000
S-67	0-0.5	59
S-68 <sup>(4)</sup>	0-0.5	1,200
S-69 <sup>(4)</sup>	0-0.5	2,600
S-70 <sup>(4)</sup>	0-0.5	790
S-71 <sup>(4)</sup>	0-0.5	<b>29,000</b>
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-72	0-0.5	57
S-73	0-0.5	62
S-74 <sup>(4)</sup>	0-0.5	7,800
S-75 <sup>(4)</sup>	0-0.5	690
S-76	0-0.5	98
S-77	0-0.5	46
S-78	0-0.5	<b>12,000</b>
S-79	0-0.5	200
S-80	0-0.5	74
S-81	0-0.5	60
S-82 <sup>(4)</sup>	0-0.5	2,000
S-83	0-0.5	330
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface.
- (2) - Sample results are in milligrams per kilogram (mg/kg).
- (3) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA for the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard applies to soils and the 550 mg/kg standard is for sediments.
- (4) - These are sediment samples that were collected from on-site drainage swales/ponds in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- 29,000** - Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.
- Bold** - Lead was detected at or above its EPA Cleanup Level.

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR SOIL DELINEATION SAMPLES  
COLLECTED BY PENN E&R IN JUNE/JULY 2006  
FORMER STEIERT PROPERTY

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-84	0-0.5	29
S-84-A Dup. of S-84	0-0.5	41
S-85	0-0.5	<b>9,400</b>
S-86	0-0.5	590
S-87	0-0.5	400
S-88	0-0.5	340
S-89	0-0.5	210
S-90	0-0.5	<b>1,300</b>
S-91	0-0.5	<b>9,000</b>
S-92	0-0.5	480
S-93	0-0.5	370
S-94	0-0.5	780
S-95	0-0.5	<b>26,000</b>
S-96	0-0.5	640
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-97	0-0.5	670
S-98	0-0.5	420
S-99	0-0.5	<b>1,200</b>
S-100	0-0.5	<b>5,300</b>
S-101	0-0.5	<b>20,000</b>
S-102	0-0.5	830
S-103	0-0.5	<b>2,700</b>
S-103-A Dup. of S-103	0-0.5	<b>2,600</b>
S-104	0-0.5	<b>4,400</b>
S-105	0-0.5	960
S-106	0-0.5	220
S-107 <sup>(4)</sup>	0-0.5	<b>6,600</b>
S-108 <sup>(4)</sup>	0-0.5	<b>1,500</b>
S-109	0-0.5	220
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-110	0-0.5	680
S-111	0-0.5	<b>2,700</b>
S-112	0-0.5	<b>1,200</b>
S-113	0-0.5	<b>6,300</b>
S-114	0-0.5	<b>28,000</b>
S-115 <sup>(4)</sup>	0-0.5	110
S-116 <sup>(4)</sup>	0-0.5	<b>3,200</b>
S-117 <sup>(4)</sup>	0-0.5	<b>2,900</b>
S-118 <sup>(4)</sup>	0-0.5	190
S-119 <sup>(4)</sup>	0-0.5	<b>5,100</b>
S-120 <sup>(4)</sup>	0-0.5	<b>3,000</b>
S-121 <sup>(4)</sup>	0-0.5	210
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
S-122 <sup>(4)</sup>	0-0.5	<b>2,200</b>
S-123 <sup>(4)</sup>	0-0.5	<b>2,200</b>
S-124 <sup>(4)</sup>	0-0.5	140
S-124-A Dup. of S-124 <sup>(4)</sup>	0-0.5	150
S-125 <sup>(4)</sup>	0-0.5	<b>3,500</b>
S-126 <sup>(4)</sup>	0-0.5	800
S-127 <sup>(4)</sup>	0-0.5	170
S-128 <sup>(4)</sup>	0-0.5	<b>2,600</b>
S-129 <sup>(4)</sup>	0-0.5	190
S-130 <sup>(4)</sup>	0-0.5	190
EPA Cleanup Level <sup>(3)</sup>	-	1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface.
- (2) - Sample results are in milligrams per kilogram (mg/kg).
- (3) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA for the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard applies to soils and the 550 mg/kg standard is for sediments.
- (4) - These are sediment samples that were collected from on-site drainage swales/ponds in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- 29,000** - Lead concentrations exceed 10,000 mg/kg and, as a result, this soil will be stabilized after being excavated.
- Bold** - Lead was detected at or above its EPA Cleanup Level.

TABLE 3

**SUMMARY OF LABORATORY ANALYTICAL RESULTS  
FOR SEDIMENT SAMPLES COLLECTED FROM POND 4  
BY PENN E&R IN JUNE/JULY 2006  
FORMER STEIERT PROPERTY**

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
4-1	0-0.5	120
4-1-D	0.5-1	20
4-2	0-0.5	51
4-2-D	0.5-1	14
4-3	0-0.5	66
4-3-D	0.5-1	9.7
4-4	0-0.5	56
4-4-D	0.5-1	50
<b>EPA Cleanup Level</b>	-	550

## Notes:

- (1) - Sample Collection Depths Are in Feet Below the Bottom of Pond 4.
- (2) - Sample Results are in milligrams per kilogram.
- (3) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA For the Removal Response Action at the Former Steiert Facility.

TABLE 4

**SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
COMPARISON SAMPLES COLLECTED  
BY PENN E&R IN JUNE/JULY 2006  
FORMER STEIERT PROPERTY**

Sample Designation	Sample Collection Depth <sup>(1)</sup>	Lead Result <sup>(2)</sup>
PS-11-R (PS-11)	0-0.5	58 (52.6)
PS-24-R (PS-24)	0-0.5	690 (690)
PS-25-R (PS-25)	0-0.5	<b>28,000 (114,000)</b>
PS-28-R (PS-28) - Pond 1 <sup>(3)</sup>	0-0.5	460 (NR)
PS-19-R (PS-19)	0-0.5	<b>3,200 (30,3000)</b>
PS-27-R (PS-27) - Pond 1 <sup>(3)</sup>	0-0.5	76 (NR)
PS-33-R (PS-33)	0-0.5	72 ( <b>3,300</b> )
PS-29-R (PS-29)	0-0.5	280 (140)
PS-36-R (PS-36)	0-0.5	61 (86)
PS-40-R (PS-40) <sup>(3)</sup>	0-0.5	<b>1,200 (670)</b>
<b>EPA Cleanup Level <sup>(4)</sup></b>	-	1,000/550

Notes:

- (1) - Sample collection depths are in feet below the ground surface for the soil samples and in feet below the bottom of Pond 1 for sediment samples PS-27-R and PS-28-R.
- (2) - Sample Results are in milligrams per kilogram .
- (3) - These are sediment samples that were collected from on-site drainage swales in which lead was detected above its EPA Cleanup Level of 550 mg/kg.
- (4) - The cleanup level was established pursuant to the Administrative Order by Consent Executed by Oaktree Industrial Corporation and EPA for the Removal Response Action at the Former Steiert Facility. The 1,000 mg/kg standard applies to soils and the 550 mg/kg standard is for sediments.
- (PS-11) - Original sample location and reported lead result for samples historically collected by American Resource Consultants, Inc.
- NR - Not Reported
- 28,000** - Lead concentrations exceed 10,000 mg/kg and as a result in the ponds and drainage swales, this soil will be stabilized after being excavated.
- Bold -** Lead was detected at or above its EPA Cleanup Level.

TABLE 5

**SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR POND  
WATER SAMPLES  
FORMER STEIERT PROPERTY**

Sample Designation	Lead Result <sup>(1)</sup>
Pond -1	12
Pond -2	<2.4
Pond -3	29

Notes:

- (1) - The samples were analyzed for total lead. Sample results are presented in micrograms per liter (ug/l).

TABLE 6

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM NORTHWEST AREA B  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-45	PE-46	PE-47	PE-51	PE-52	PE-119	PE-120	PE-121	PE-122	PE-123			
Lead	110	490	<b>1,100</b>	<b>3,200</b>	<b>2,000</b>	180	380	19	42	<b>1,600</b>	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-124	PE-135	PE-136	PE-137	PE-138	PE-139	PE-149	PE-150	PE-151	PE-48			
Lead	<b>3,300</b>	18	27	22	<b>12,000</b>	110	15	16	34	650	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	<b>2.0-2.5</b>	2.0-2.5	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-49	PE-49A	PE-50	PE-50A	PE-50B	PE-50C	PE-50D	PE-50E	PE-50F	PE-50G			
Lead	310	490	<b>11,000</b>	440	360	350	<b>2,400</b>	830	570	<b>1,400</b>	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	<b>0.0-0.5</b>	0.0-0.5	0.0-0.5	0.0-0.5	<b>0.0-0.5</b>	2.0-2.5	0.0-0.5	<b>0.0-0.5</b>	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 6 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM NORTHWEST AREA B  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-50H	PE-50I	PE-53	PE-53A	PE-53B	PE-53C	PE-53D	PE-53E	PE-53F	PE-152			
Lead	32	810	<b>1,100</b>	17	200	870	<b>2,300</b>	15	<b>1,100</b>	15	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	0.0-0.5	<b>2.0-2.5</b>	2.0-2.5	0.0-0.5	0.0-0.5	<b>0.0-0.5</b>	2.0-2.5	<b>0.0-0.5</b>	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-153	PE-154	PE-155	PE-169	PE-170	PE-171	PE-54	PE-55	PE-56				
Lead	62	51	<b>1,800</b>	11	300	180	420	58	190		1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0-0.5'	0-0.5'	<b>0-0.5'</b>	2.0-2.5	0.5-1.0	0.5-1.0	2.0-2.5	2.0-2.5	2.0-2.5		—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 7

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM NORTHWEST AREA C  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-57	PE-58	PE-59	PE-60	PE-61	PE-62	PE-63	PE-63B	PE-64	PE-65			
Lead	260	<b>1,600</b>	<b>1,000</b>	160	350	480	<b>1,900</b>	<b>1,900</b>	190	42	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	<b>2.0-2.5</b>	<b>2.0-2.5</b>	2.0-2.5	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	<b>2.0-2.5</b>	2.0-2.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-66	PE-67	PE-68	PE-78	PE-79	PE-80	PE-81	PE-82	PE-156	PE-157			
Lead	100	<b>5,200</b>	<b>2,500</b>	14	34	14	17	37	550	73	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	<b>2.0-2.5</b>	<b>2.0-2.5</b>	3.0-3.5	3.0-3.5	3.0-3.5	3.0-3.5	3.0-3.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-158	PE-159	PE-160	PE-161	PE-162	PE-163	PE-163A	PE-164	PE-165	PE-166			
Lead	23	11	<b>2,400</b>	20	630	<b>3,500</b>	<b>4,300</b>	610	17	58	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	<b>2.0-2.5</b>	2.0-2.5	2.5-3.0'	2.5-3.0	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 7 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM NORTHWEST AREA C  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-167	PE-168											
Lead	660	13									1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.5-3.0	2.5-3.0									—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 8

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM NORTHCENTRAL AREA A  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-145	PE-146	PE-147	PE-148									
Lead	22	110	24	110							1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	0.0-0.5	0.0-0.5	0.0-0.5							—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 9

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM EASTERN DRAINAGE SWALE AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-25	PE-26	PE-27	PE-28	PE-29	PE-30	PE-31	PE-32	PE-33	PE-33A			
Lead	160	<b>1,100</b>	110	37	13	150	25	92	<b>3,400</b>	9.4	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	<b>0.0-0.5</b>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	<b>0.0-0.5</b>	2.5-3.0	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-33B	PE-33C	PE-33D	PE-34	PE-35	PE-36	PE-37	PE-38	PE-39	PE-40			
Lead	62	43	14	40	18	16	9.2	16	210	89	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.5-3.0	2.5-3.0	2.5-3.0	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(4)</sup>	PADEP NRSG MSC <sup>(5)</sup>
	PE-40A	PE-41	PE-42	PE-43	PE-44	A-1	A-2	A-3	A-4	A-5			
Lead	84	340	660	440	9.3	51	11	30	43	43	1,000	500	450
Sample Collection Depths <sup>(3)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 9 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM EASTERN DRAINAGE SWALE AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	A-6	A-7	A-8	B-1	B-2	B-3	B-4	B-5	B-6	B-7			
Lead	170	14	36	490	8.8	89	11	380	10	23	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	B-8	B-8A	PE-83	PE-84	PE-85	PE-86	PE-87	PE-87A	PE-87B	PE-87C			
Lead	92	230	9.1	33	9	28	7,700	12	13	11	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(4)</sup>	PADEP NRSG MSC <sup>(5)</sup>
	PE-88	PE-89	PE-94	PE-95	PE-95A	PE-96	PE-97	PE-98	PE-98B	PE-99			
Lead	35	62	18	<b>1,100</b>	30	140	21	<b>1,200</b>	16	310	1,000	500	450
Sample Collection Depths <sup>(3)</sup>	2.0-2.5	2.0-2.5	1.5-2.0	<b>1.5-2.0</b>	2.0-2.5	1.5-2.0	1.5-2.0	<b>1.5-2.0</b>	2.0-2.5	1.5-2.0	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.  
 (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.  
 (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)  
 (4) - Sample collection depths are in feet below the ground surface.  
**Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.  
 EPA - United States Environmental Protection Agency  
 PADEP - Pennsylvania Department of Environmental Protection  
 RDC - Residential Direct Contact  
 RSG - Residential Soil-to-Groundwater  
 MSC - Medium-Specific Concentration

TABLE 9 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM EASTERN DRAINAGE SWALE AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-100	PE-100A	PE-101	PE-102	PE-103	PE-103A	PE-104	PE-105	PE-106	PE-107			
Lead	1,400	14	140	130	1,100	15	140	26	750	110	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	1.5-2.0	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-108	PE-109	PE-110	PE-111	PE-112	PE-113	PE-113A	PE-113B	PE-113C	PE-113D			
Lead	320	58	83	280	590	1,400	49	680	840	220	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	1.5-2.0	1.5-2.0	1.5-2.0	2.0-2.5	0.0-0.5	0.0-0.5	2.0-2.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(4)</sup>	PADEP NRSG MSC <sup>(5)</sup>
	PE-114	PE-115	PE-116	PE-117	PE-118	PE-125	PE-126	PE-127	PE-128	PE-129			
Lead	280	39	110	24	200	19	18	250	18	16	1,000	500	450
Sample Collection Depths <sup>(3)</sup>	0.0-0.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 9 (Continued)

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM EASTERN DRAINAGE SWALE AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-130	PE-131	PE-132	PE-133	PE-133A	PE-134	PE-140	PE-141	PE-142	PE-143			
Lead	18	60	46	<b>5,000</b>	16	30	20	28	21	16	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.5-1.0	0.5-1.0	0.5-1.0	<b>0.5-1.0</b>	2.0-2.5	0.5-1.0	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-144												
Lead	240										1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.5-1.0										—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 10

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM EASTERN AREA A  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-69	PE-70	PE-71	PE-72	PE-72B	PE-73	PE-73A	PE-73B	PE-73C	PE-73D			
Lead	310	130	52	320	130	<b>3,800</b>	15	8	10	61	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	<b>2.0-2.5</b>	3.0-3.5'	3.0-3.5'	3.0-3.5'	3.0-3.5'	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-74	PE-75	PE-76	PE-77	PE-90	PE-91	PE-92	PE-93					
Lead	130	29	37	690	34	130	18	28			1,000	500	450
Sample Collection Depths <sup>(4)</sup>	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5			—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 11

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM POND NO. 1 AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-1	PE-1A	PE-2	PE-3	PE-4	PE-5	PE-6	PE-7	PE-8	PE-9			
Lead Results	17	13	11	11	5	7.3	<6.4	7.6	8.5	55	550	500	450
Sample Collection Depths <sup>(4)</sup>	1.0-1.5	1.0-1.5	4.0-4.5	3.0-3.5	2.0-2.5	4.0-4.5	1.0-1.5	4.0-4.5	2.0-2.5	1.0-1.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-10	PE-11	PE-12										
Lead Results	5.5	9.8	22								550	500	450
Sample Collection Depths <sup>(4)</sup>	4.0-4.5	2.0-2.5	3.0-3.5								—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- <6.4 - Lead was not detected above the listed laboratory detection limit.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 12

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM POND NO. 2 AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results											EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	P2-A	P2-B	P2-C	P2-D	P2-E	P2-F	P2-G	P2-H	P2-I	P2-J	P2-K			
Lead Results	11	31	22	63	23	32	47	25	26	23	29	550	500	450
Sample Collection Depth <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Notes:

(1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.

(2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)

(4) - Sample collection depths are in feet below the ground surface.

**Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.

EPA - United States Environmental Protection Agency

PADEP - Pennsylvania Department of Environmental Protection

RDC - Residential Direct Contact

RSG - Residential Soil-to-Groundwater

MSC - Medium-Specific Concentration

TABLE 13

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST EXCAVATION SOIL SAMPLES COLLECTED  
FROM POND NO. 3 AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-13	PE-14	PE-15	PE-16	PE-17	PE-18	PE-19	PE-20	PE-21	PE-22			
Lead	<5	7.1	27	55	31	160	8.1	15	8.8	<5	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-23	PE-24	PE-24A										
Lead	5.3	14	17								1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5								—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- <5 - Lead was not detected above the listed laboratory detection limit.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 14

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
SURFACE SOIL SAMPLES COLLECTED  
FROM DETENTION BASIN AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results								EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	RB-1	RB-2	RB-3	RB-4	RB-5	RB-6	RB-7	RB-8			
Total Lead Results	140	80	120	89	53	76	58	79	550	500	450
Sample Collection Depth <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 15

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
STABILIZATION CONFIRMATION SOIL SAMPLES  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results								RCRA Regulatory Level <sup>(2)</sup>
	200-A	200-B	200-C	200-D	200-E	200-F	200-G	200-G-2	
Date Collected	3/8/2007	3/12/2007	3/21/2007	3/26/2007	4/5/2007	4/11/2007	5/2/2007	5/14/2007	-
Total Lead Results (mg/kg)	1,200	3,100	2,200	1,200	280	1,200	<b>2,200</b>	3,000	-
TCLP Lead Results (mg/l)	1.8	0.43	1.4	0.45	0.27	0.58	5.2	1.6	5

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results								RCRA Regulatory Level <sup>(2)</sup>
	200-H	200-H-2	200-I	200-J					
Date Collected	5/8/2007	5/14/2007	5/29/2007	6/5/2007					-
Total Lead Results (mg/kg)	<b>3,600</b>	3,800	1,700	420					-
TCLP Lead Results (mg/l)	<b>5.6</b>	1.6	0.48	1.4					5

Notes:

- (1) - All samples were analyzed for leachable lead (TCLP) and total lead.  
 (2) - AOC clean up standard developed for TCLP result for stabilized soils for the Steiert Site by EPA.  
 (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)  
 RCRA - Resource Conservation and Recovery Act  
 TCLP - Toxicity Characteristic Leaching Procedure  
 EPA - Environmental Protection Agency  
 mg/kg - milligrams per kilogram  
 mg/L - milligrams per liter  
**Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.

TABLE 16

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
POST-EXCAVATION SOIL SAMPLES COLLECTED  
FROM BENEATH THE FORMER CONCRETE MIXING PAD AREA  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-172	PE-172A	PE-173	PE-174	PE-174A	PE-175	PE-176	PE-177	PE-178	PE-179			
Lead	<b>1,000</b>	15	21	<b>1,200</b>	37	56	600	130	14	690	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	<b>0.5-1.0</b>	1.0-1.5	0.5-1.0	<b>0.5-1.0</b>	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	0.5-1.0	—	—	—

Notes:

(1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.

(2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)

(4) - Sample collection depths are in feet below the ground surface.

**Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.

EPA - United States Environmental Protection Agency

PADEP - Pennsylvania Department of Environmental Protection

RDC - Residential Direct Contact

RSG - Residential Soil-to-Groundwater

MSC - Medium-Specific Concentration

TABLE 17

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
DETENTION BASIN WATER SAMPLES  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation										PADEP DISCHARGE STANDARD
	BS-5	BS-6	BS-7	BS-8	BS-9	BS-10	BS-11	BS-12	BS-13	BS-14	
Date Collected	3/7/2007	3/7/2007	3/22/2007	3/22/2007	3/30/2007	3/30/2007	4/3/2007	4/9/2007	4/23/2007	5/9/2007	
Total Lead Results (ug/l)	90	NA	80	NA	16	NA	16	23	130	110	15 <sup>(2)</sup>
Dissolved Lead Results (ug/l)	NA	6	NA	7.2	NA	1.4	NA	NA	NA	NA	NA

Analytical Parameters <sup>(1)</sup>	Sample Designation										PADEP DISCHARGE STANDARD
	BS-15	BS-16	BS-17	BS-18	BS-19	BS-20	BS-21	BS-22	BS-23	BS-24	
Date Collected	5/16/2007	5/21/2007	5/24/2007	5/30/2007	5/31/2007	6/1/2007	6/8/2007	6/12/2007	8/9/2007	8/13/2007	
Total Lead Results (ug/l)	52	21	5.2	5.6	10	12	14	17	4.4	11.0	15 <sup>(2)</sup>
Dissolved Lead Results (ug/l)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Analytical Parameters <sup>(1)</sup>	Sample Designation										PADEP DISCHARGE STANDARD
	BS-25										
Date Collected	8/14/2007										
Total Lead Results (ug/l)	15.0										15 <sup>(2)</sup>
Dissolved Lead Results (ug/l)	NA										NA

## Notes:

- (1) - Samples were analyzed for total lead (ug/l) and dissolved lead (ug/l).  
 (2) - PADEP Temporary Discharge Limit for Lead for the Site  
 NA - Not Analyzed  
 ug/l - micrograms per liter  
**Bold** - Lead concentration exceeded its PADEP temporary discharge limit.

TABLE 18

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
CONFIRMATORY SOIL SAMPLES COLLECTED  
FROM THE CLEAN SOIL AREAS  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-180	PE-181	PE-182	PE-183	PE-184	PE-185	PE-186	PE-187	PE-188	PE-189			
Lead	9.4	10	19	59	60	14	59	25	270	23	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-190	PE-191	PE-192	PE-193	PE-194	PE-195	PE-196	PE-197	PE-198	PE-199			
Lead	120	94	50	75	64	210	95	110	52	76	1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	PE-200	PE-201	PE-202										
Lead	100	73	70								1,000	500	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5								—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- RDC - Residential Direct Contact
- RSG - Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

TABLE 19

SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
CONFIRMATORY SOIL SAMPLES COLLECTED  
FROM AND ADJACENT TO THE BERM  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(3)</sup>	PADEP NRSG MSC <sup>(3)</sup>
	CS-1	CS-2	CS-3	CS-3A	CS-3B	CS-3C	CS-3D	CS-3E	CS-3F	CS-3G			
Lead	360	150	1,300	43	66	74	180	120	80	120	1,000	1,000	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(3)</sup>	PADEP NRSG MSC <sup>(3)</sup>
	CS-3H	CS-3I	CS-3J	CS-4	CS-5	CS-6	CS-7	CS-8	CS-9	CS-10			
Lead	230	150	7.8	74	42	45	65	370	160	2,600	1,000	1,000	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	2.0-2.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	—	—	—

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results										EPA CLEANUP STANDARD <sup>(2)</sup>	PADEP NRDC MSC <sup>(3)</sup>	PADEP NRSG MSC <sup>(3)</sup>
	CS-10A	CS-10B	CS-10C	CS-10D	CS-10E	CS-10F	CS-10G	CS-10H	CS-11	CS-12			
Lead	290	250	300	390	300	19	12	7.3	530	44	1,000	1,000	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	2.0-2.5	2.0-2.5	2.0-2.5	0.0-0.5	0.0-0.5	—	—	—

**Notes:**

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.  
 (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.  
 (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Non-Residential Medium-Specific Concentrations (November 24, 2001)  
 (4) - Sample collection depths are in feet below the ground surface.  
**Bold** - Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 MSC.  
 EPA - United States Environmental Protection Agency  
 PADEP - Pennsylvania Department of Environmental Protection  
 NRDC - Non-Residential Direct Contact  
 NRSG - Non-Residential Soil-to-Groundwater  
 MSC - Medium-Specific Concentration

TABLE 19 (Continued)

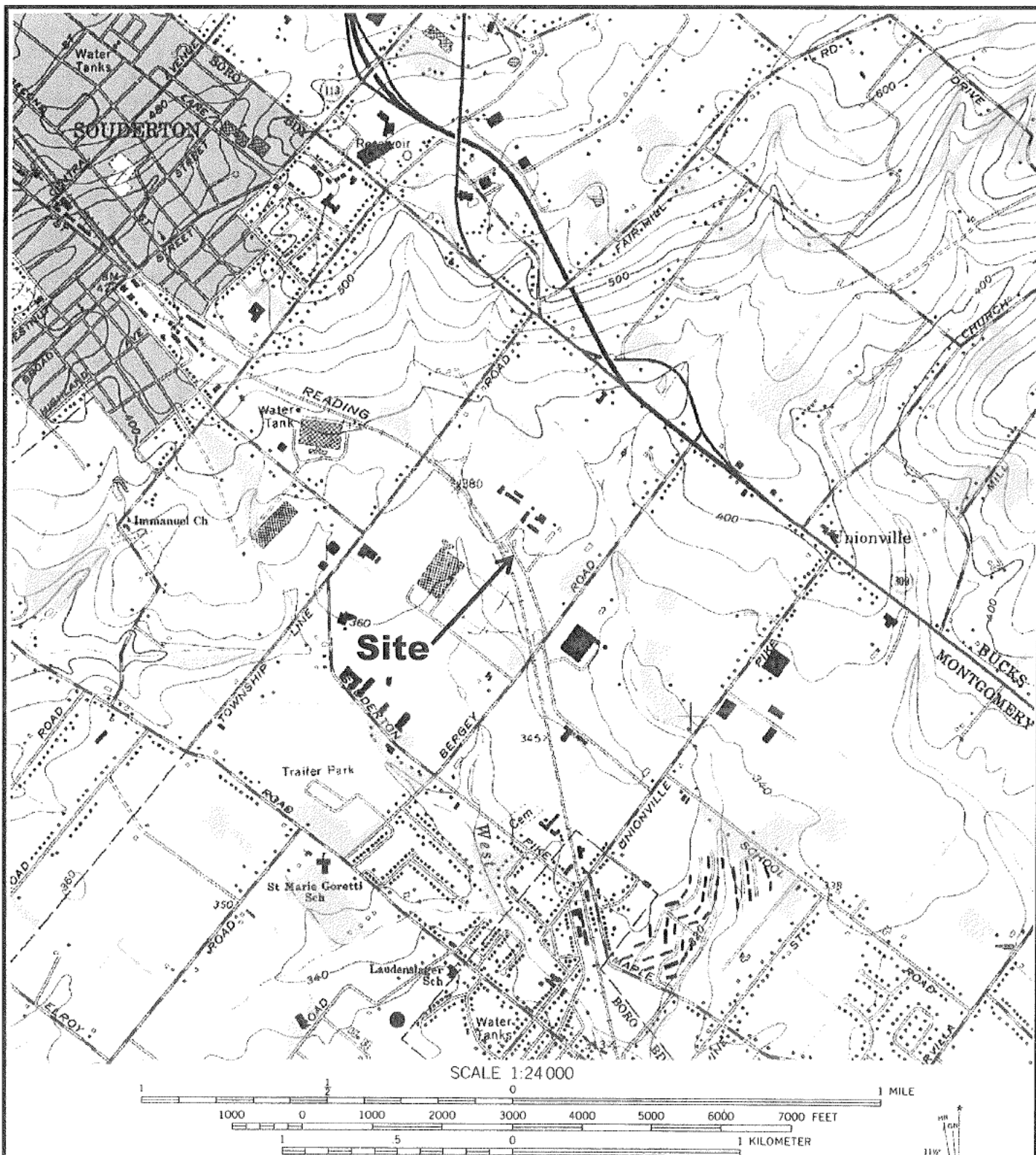
SUMMARY OF LABORATORY ANALYTICAL RESULTS FOR  
CONFIRMATORY SOIL SAMPLES COLLECTED  
FROM AND ADJACENT TO THE BERM  
FORMER STEIERT PROPERTY

Analytical Parameters <sup>(1)</sup>	Sample Designation/Analytical Results								EPA CLEANUP STANDARD (2)	PADEP NRDC MSC <sup>(3)</sup>	PADEP NRSG MSC <sup>(3)</sup>
	CS-13	CS-14	TB-1	TB-2	TB-3	TB-4	TB-5	TB-6			
Lead	150	15	130	520	66	61	550	83	1,000	1,000	450
Sample Collection Depths <sup>(4)</sup>	0.0-0.5	0.0-0.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	2.0-2.5	—	—	—

Notes:

- (1) - All samples were analyzed for lead and sample results are in milligrams per kilogram.
- (2) - AOC clean up standard developed for lead in sediments for the Steiert Site by EPA.
- (3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Non-Residential Medium-Specific Concentrations (November 24, 2001)
- (4) - Sample collection depths are in feet below the ground surface.
- Bold -** Sample results exceed either its EPA Cleanup Standard and/or PADEP Act 2 Non-Residential MSC.
- EPA - United States Environmental Protection Agency
- PADEP - Pennsylvania Department of Environmental Protection
- NRDC - Non-Residential Direct Contact
- NRSG - Non-Residential Soil-to-Groundwater
- MSC - Medium-Specific Concentration

## **FIGURES**



Source: ExpertGPS – Telford Quadrangle Topo: July 1, 1973



**Penn E&R**  
Environmental & Remediation, Inc.

Hatfield, Pennsylvania 19440  
215-997-9000 fax 215-822-8575

## FIGURE 1

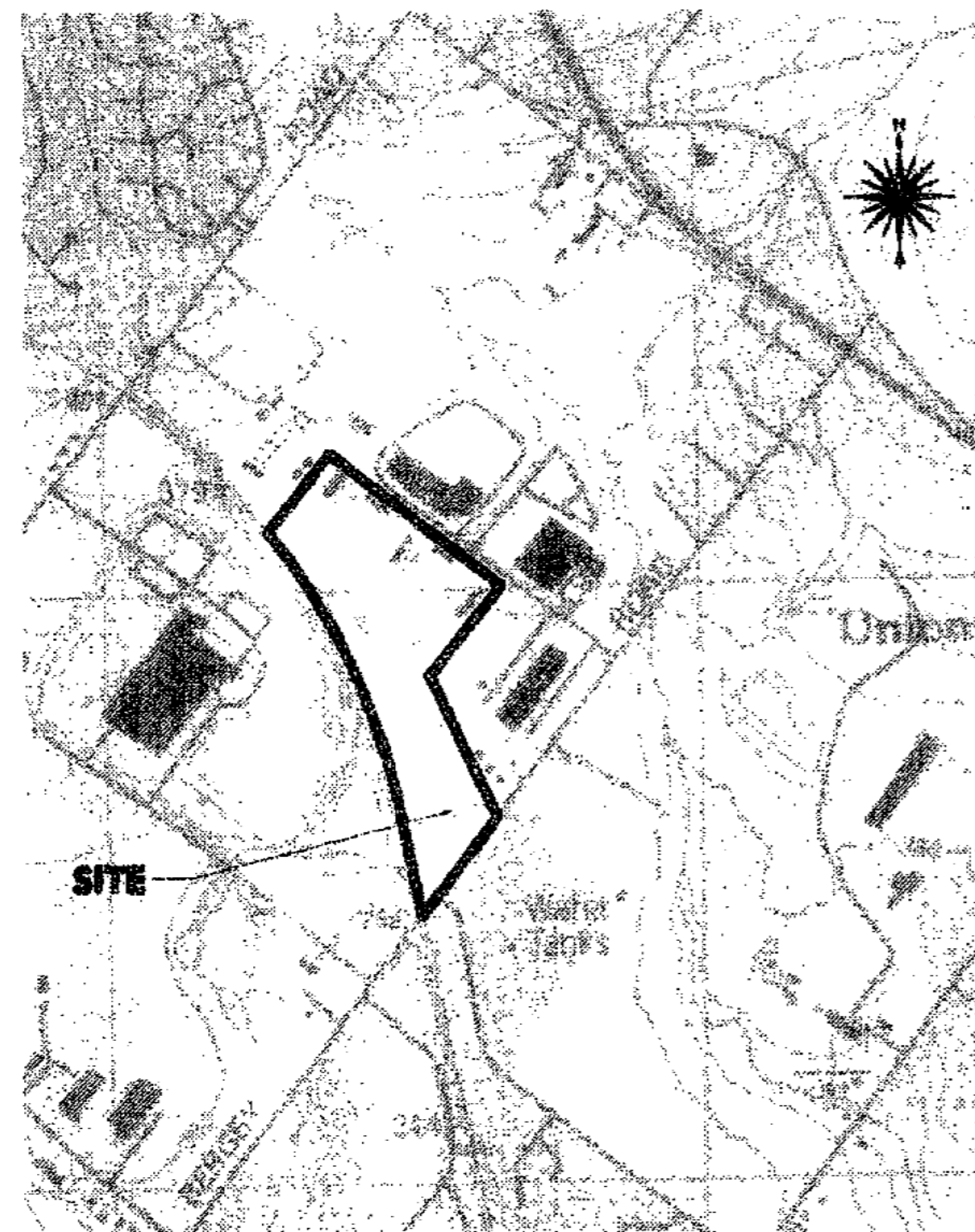
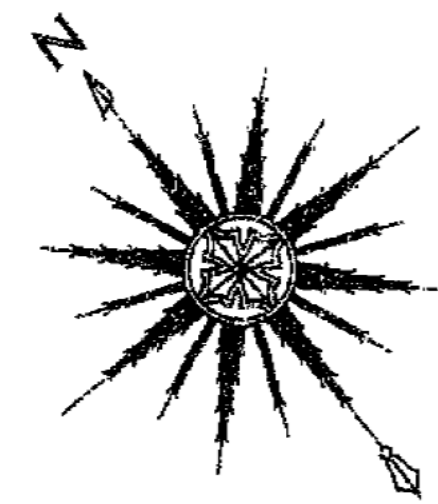
Site Location Map  
Former Steiert Facility  
Souderton, Montgomery County, Pennsylvania

Date:  
**3-JAN-08**

Project Number:  
**HA 5177**

Scale:  
**As Noted**

AR100376



#### LOCATION MAP

SCALE: 1"=1,000'

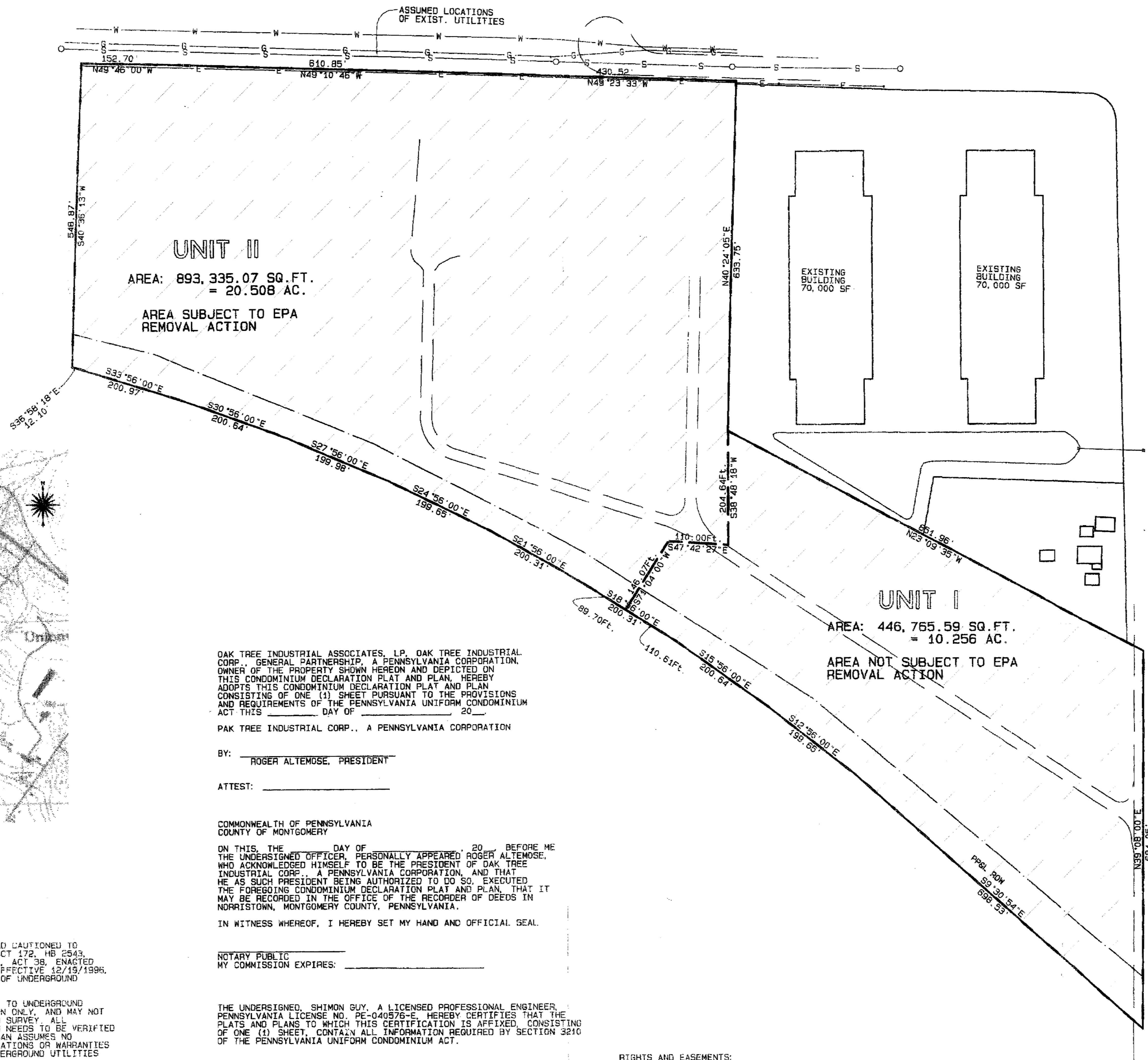
USGS TELFORD, PA QUADRANGLE  
7.5-MINUTE SERIES

#### GENERAL NOTES:

- ALL USERS OF THIS PLAN ARE REFERRED TO AND CAUTIONED TO COMPLY WITH PA ACT 267 AS AMENDED BY PA ACT 172, HB 2543, ENACTED 6/10/1987, AND PA HB 722, P.L. 364, ACT 38, ENACTED 12/12/1981, AND BY PA HB 2627, ACT 187, EFFECTIVE 12/19/1996, ENTITLED "EXCAVATION AND DEMOLITION WORK OF UNDERGROUND UTILITIES".
- THIS PLAN CONTAINS INFORMATION PERTAINING TO UNDERGROUND UTILITIES WHICH IS FOR GENERAL INFORMATION ONLY, AND MAY NOT BE BASED ON AN ACTUAL SUBSURFACE LOCATION SURVEY. ALL SUBSURFACE INFORMATION SHOWN ON THIS PLAN NEEDS TO BE VERIFIED BY THE PLAN USER. THE PREPARER OF THIS PLAN ASSUMES NO RESPONSIBILITY FOR AND MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE ACCURACY OF THE LOCATION OF UNDERGROUND UTILITIES OR OTHER UNDERGROUND FEATURES.

#### NOTE:

DATA DEPICTED ON THIS PLAN IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. IT IS BASED ON A SUBDIVISION PLAN PREPARED BY C. RAYMOND WEIR ASSOCIATES INC., AMBLER, PA, DATED 6/15/81, LAST REVISED 10/13/81. GUY ENGINEERING ASSOCIATES, INC. DID NOT PERFORM A PHYSICAL LAND SURVEY OF THE SUBJECT PROPERTY.



OAK TREE INDUSTRIAL ASSOCIATES, L.P. OAK TREE INDUSTRIAL CORP., GENERAL PARTNERSHIP, A PENNSYLVANIA CORPORATION, OWNER OF THE PROPERTY SHOWN HEREON AND DEPICTED ON THIS CONDOMINIUM DECLARATION PLAT AND PLAN, HEREBY ADOPTS THIS CONDOMINIUM DECLARATION PLAT AND PLAN, CONSISTING OF ONE (1) SHEET PURSUANT TO THE PROVISIONS AND REQUIREMENTS OF THE PENNSYLVANIA UNIFORM CONDOMINIUM ACT THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_.

PAK TREE INDUSTRIAL CORP., A PENNSYLVANIA CORPORATION

BY: \_\_\_\_\_  
ROGER ALTEMOSE, PRESIDENT

ATTEST: \_\_\_\_\_

COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF MONTGOMERY

ON THIS, THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED ROGER ALTEMOSE, WHO ACKNOWLEDGED HIMSELF TO BE THE PRESIDENT OF OAK TREE INDUSTRIAL CORP., A PENNSYLVANIA CORPORATION, AND THAT HE AS SUCH PRESIDENT BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING CONDOMINIUM DECLARATION PLAT AND PLAN, THAT IT MAY BE RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN NORRISTOWN, MONTGOMERY COUNTY, PENNSYLVANIA.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES: \_\_\_\_\_

THE UNDERSIGNED, SHIMON GUY, A LICENSED PROFESSIONAL ENGINEER, PENNSYLVANIA LICENSE NO. PE-040576-E, HEREBY CERTIFIES THAT THE PLATS AND PLANS TO WHICH THIS CERTIFICATION IS AFFIXED, CONSISTING OF ONE (1) SHEET, CONTAIN ALL INFORMATION REQUIRED BY SECTION 3210 OF THE PENNSYLVANIA UNIFORM CONDOMINIUM ACT.

\_\_\_\_\_  
SHIMON GUY DATE

SWORN TO AND SUBSCRIBED TO BEFORE ME THIS, THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

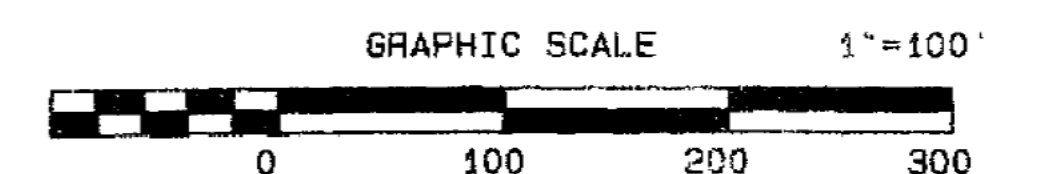
NOTARY PUBLIC

MY COMMISSION EXPIRES: \_\_\_\_\_

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- RIGHTS GRANTED TO PENNSYLVANIA POWER & LIGHT COMPANY AS RECORDED IN DEED BOOK 3355 PAGE 1141 AND DEED BOOK 3509 PAGE 512.
- RAILROAD EASEMENT AS RECORDED IN DEED BOOK 4678 PAGE 791 AND DEED BOOK 4678 PAGE 787.
- EASEMENT TO THE TOWNSHIP OF HATFIELD AS RECORDED IN DEED BOOK 4837 PAGE 2431 AND DEED BOOK 4837 PAGE 2436.
- DEDICATION TO THE TOWNSHIP OF HATFIELD FOR THE BED OF BERGEY ROAD AS RECORDED IN DEED BOOK 4678 PAGE 795.
- SUBDIVISION PLAN BY C. RAYMOND WEIR ASSOCIATES INC. AS RECORDED IN PLAN BOOK A-44 PAGE 117.

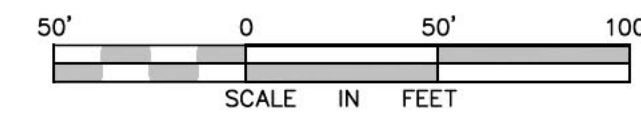
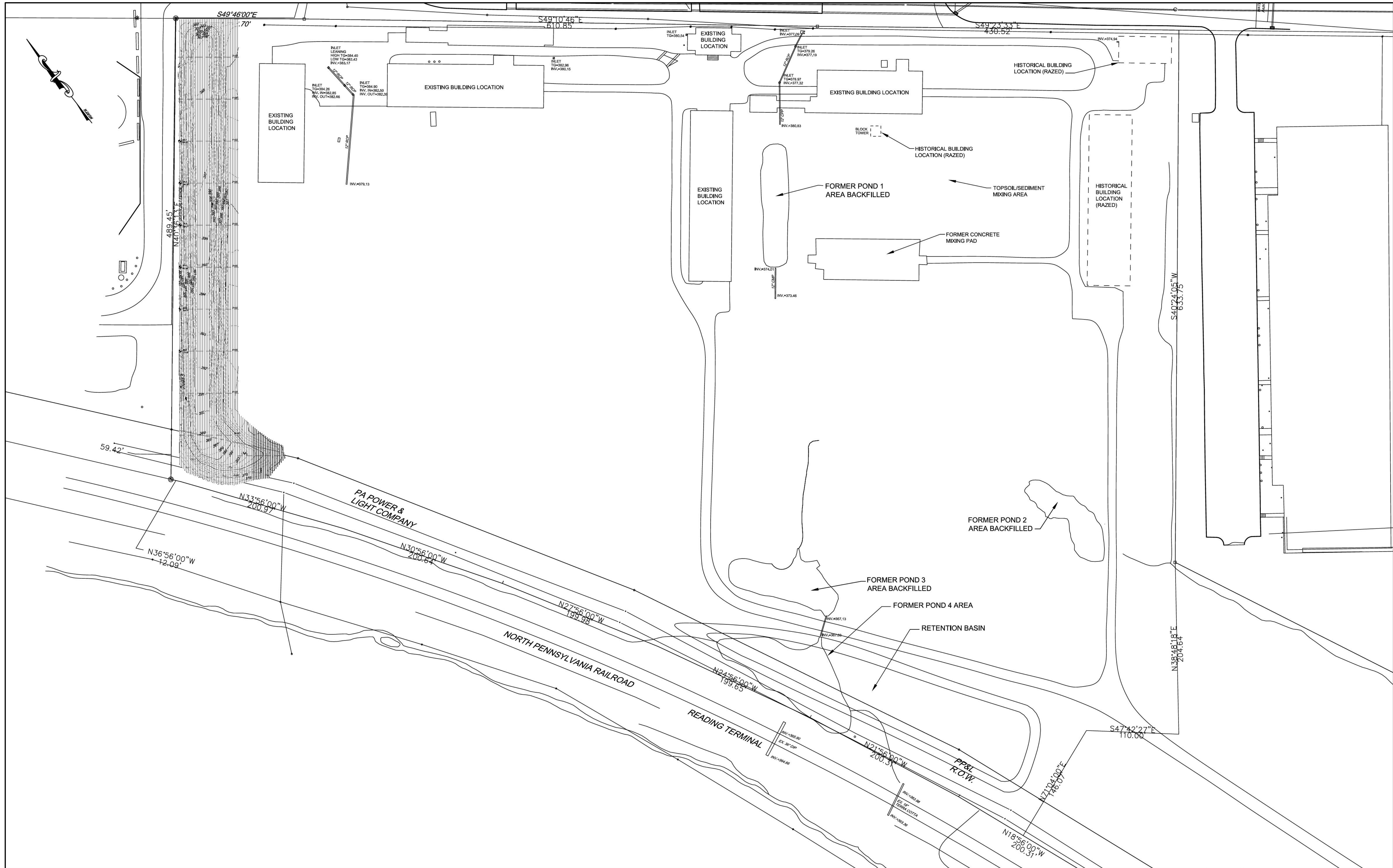
LEGEND	
BOUNDARY LINE	N15°56'00"E 100.00'
CONDOMINIUM LINE	N15°56'00"E 100.00'
PPSL R.O.W BOUNDARY	---
EX. CURB	---
EX. ELECTRIC LINE	—E—E—
EX. SANITARY SEWER	—S—S—
EX. WATER MAIN	—W—W—
EX. GAS LINE	—G—G—
EX. BUILDING WALL	---
SITE BOUNDARY	---




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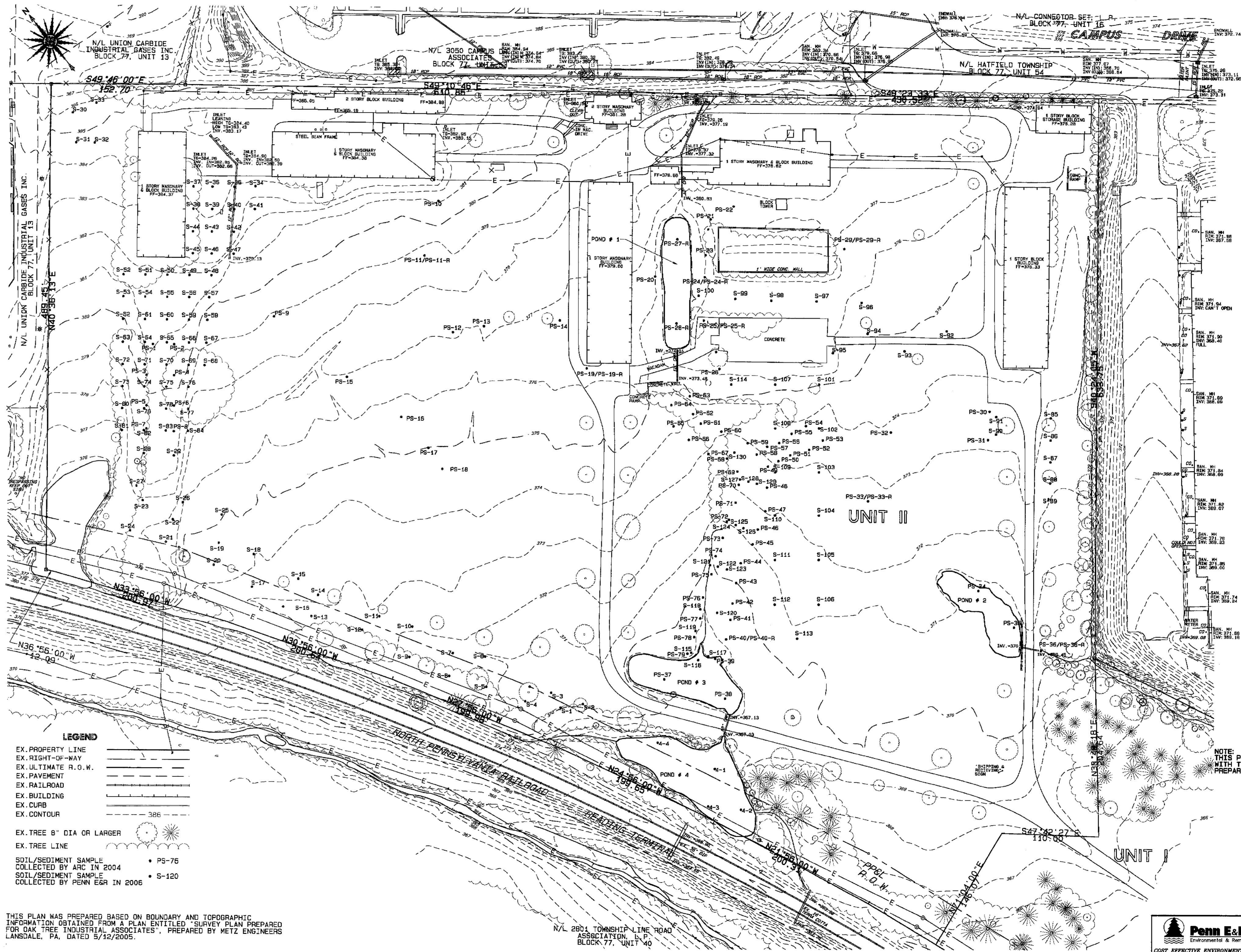
NOTE: EPA PLAN PROVIDED BY GUY ENGINEERING ASSOCIATES, INC. 05-03-2005, PREPARED FOR OAKTREE INDUSTRIAL ASSOCIATES, L.P.

 <b>Penn E&amp;R</b> Environmental & Remediation, Inc. COST EFFECTIVE ENVIRONMENTAL SOLUTIONS 2755 GENESEE ROAD, HATFIELD, PA 19440 (215) 997-9000	FIGURE NO. 2	SHEET NO. 2
	SCALE: 1" = 100'	
	PROJECT/SITE LOCATION HA5177/FORMER STEIERT SITE	
	DATE 22-FEB-2008	



 <b>Penn E&amp;R</b> Environmental & Remediation, Inc. <b>COST EFFECTIVE ENVIRONMENTAL SOLUTIONS</b> 2755 BERKEY ROAD, HATFIELD, PA 19440 (215) 997-9000 359 NORTH GATE DRIVE, SUITE 400, WARRENDALE, PA 15086 (724) 934-3535	FIGURE 3 SITE LAYOUT MAP	FIGURE NO. 3	SHEET NO. 1
	HA 5177 / FORMER STEIERT SITE		
	SCALE: 1" = 50'		
	DATE 17-DEC-2007		

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(717) 534-2500

**FIGURE 4**  
ARC AND PENN E&R SOIL  
DELINEATION SAMPLING MAP  
HA5177/FORMER STEIERT SITE

FIGURE NO. 4  
SHEET NO. 4

SCALE: 1" = 50'

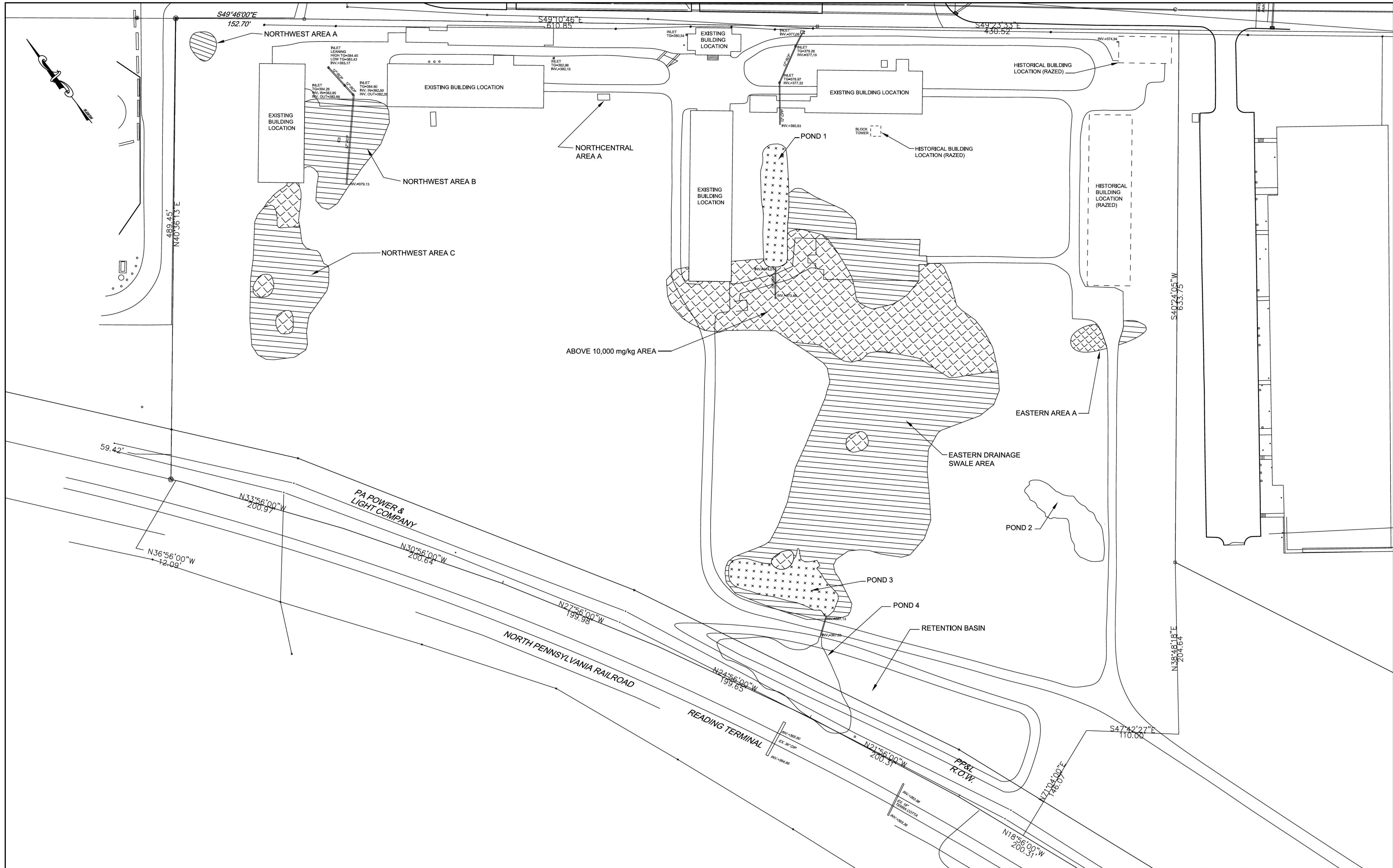
DATE: 8-24-2006

BY: [Signature]

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APPROVED BY: [Signature]

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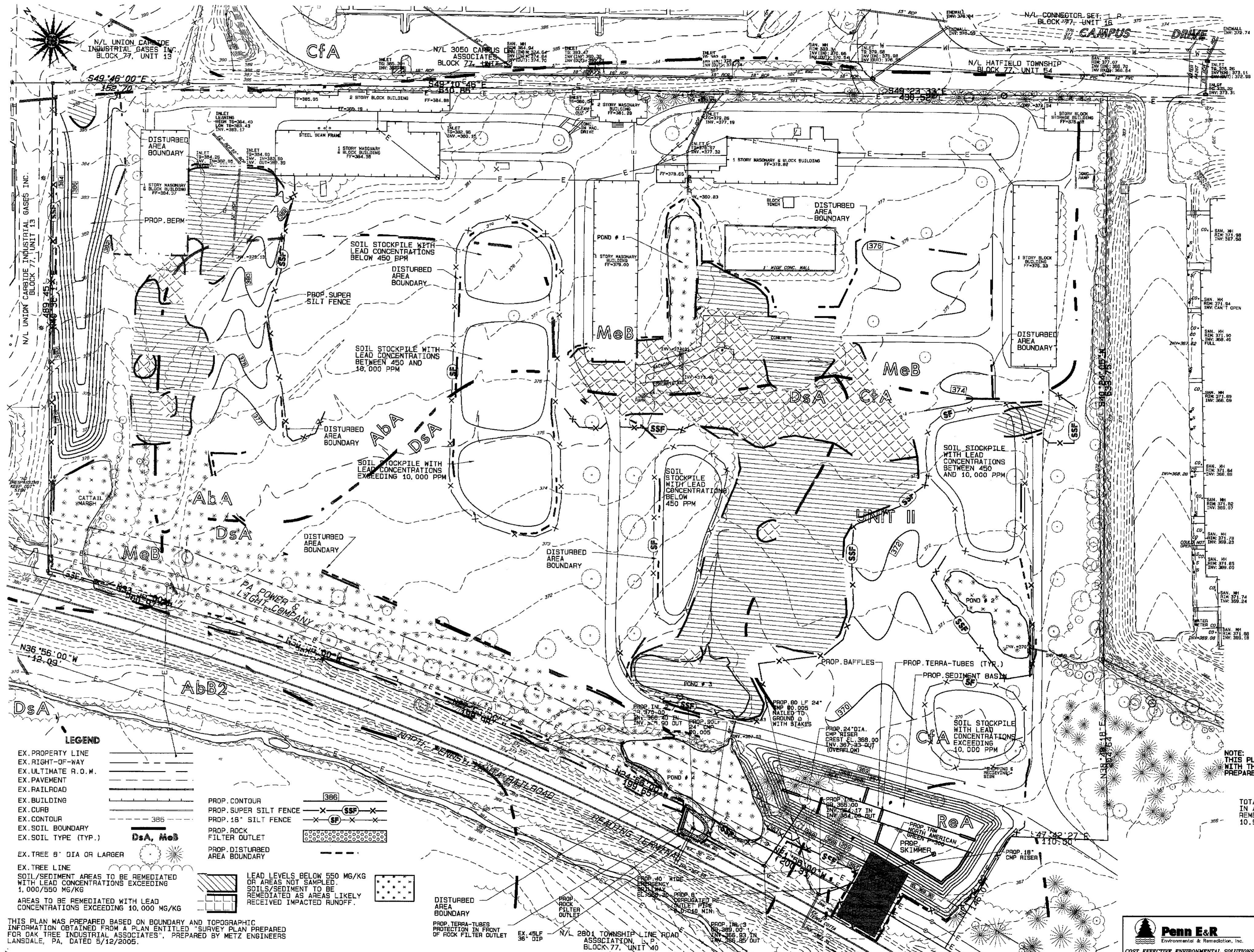


- LEGEND:
- SOIL AREAS TO BE REMEDIATED WITH LEAD CONCENTRATIONS EXCEEDING 1,000 MG/KG
  - SOIL AREAS TO BE REMEDIATED WITH LEAD CONCENTRATIONS EXCEEDING 10,000 MG/KG
  - SEDIMENT AREAS TO BE REMEDIATED WITH LEAD CONCENTRATIONS EXCEEDING 550 MG/KG



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	HA 5177 / FORMER STEIERT SITE
	SCALE: 1" = 50'
	FIGURE NO. 5 SHEET NO. 5

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NOTE: THIS PLAN SHALL BE USED TOGETHER WITH THE REMOVAL ACTION PLAN, PREPARED FOR THE SITE.

TOTAL DISTURBED AREA IN ALL PHASES OF REMEDIATION ACTIVITIES: 10.90 AC

- LEGEND**
- EX. PROPERTY LINE
  - EX. RIGHT-OF-WAY
  - EX. ULTIMATE R.O.W.
  - EX. PAVEMENT
  - EX. RAILROAD
  - EX. BUILDING
  - EX. CURB
  - EX. CONTOUR
  - EX. SOIL BOUNDARY
  - EX. SOIL TYPE (TYP.)
  - EX. TREE 8" DIA OR LARGER
  - EX. TREE LINE
  - SOIL/SEDIMENT AREAS TO BE REMEDIATED WITH LEAD CONCENTRATIONS EXCEEDING 1,000/550 MG/KG
  - AREAS TO BE REMEDIATED WITH LEAD CONCENTRATIONS EXCEEDING 10,000 MG/KG
  - PROP. CONTOUR
  - PROP. SUPER SILT FENCE
  - PROP. 18" SILT FENCE
  - PROP. ROCK FILTER OUTLET
  - PROP. DISTURBED AREA BOUNDARY
  - LEAD LEVELS BELOW 550 MG/KG OR AREAS NOT SAMPLED. SOILS/SEDIMENT TO BE REMEDIATED AS AREAS LIKELY RECEIVED IMPACTED RUNOFF.

THIS PLAN WAS PREPARED BASED ON BOUNDARY AND TOPOGRAPHIC INFORMATION OBTAINED FROM A PLAN ENTITLED 'SURVEY PLAN PREPARED FOR OAK TREE INDUSTRIAL ASSOCIATES', PREPARED BY METZ ENGINEERS LANSDALE, PA, DATED 5/12/2005.

DISTURBED AREA BOUNDARY  
PROP. TERRA-TUBES PROTECTION IN FRONT OF ROCK FILTER OUTLET  
EX. 45LF 36" DIP

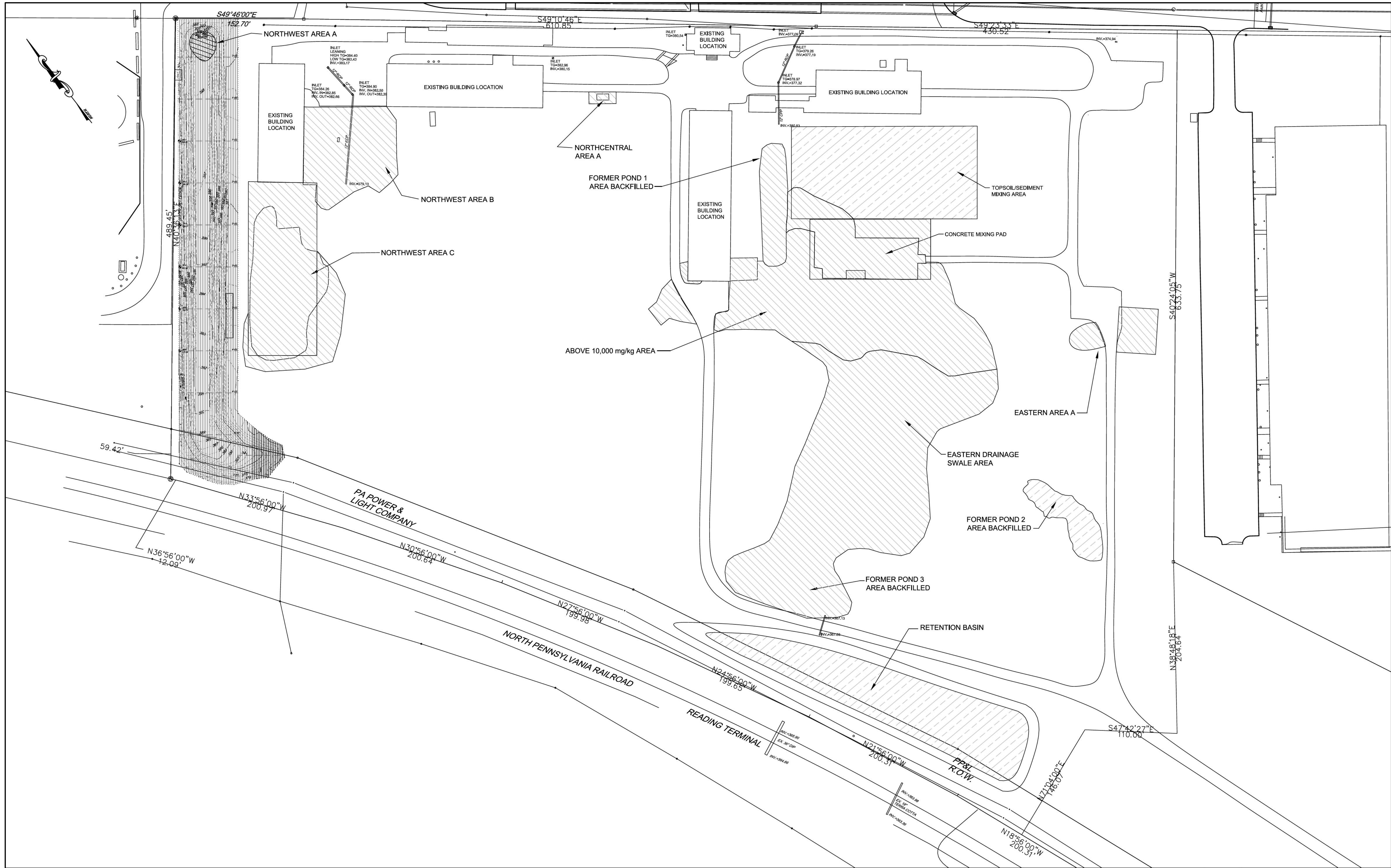
N/L 2801 TOWNSHIP LINE ROAD ASSOCIATION, L.P. BLOCK 77, UNIT 40

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Environmental & Remediation, Inc.  
COST EFFECTIVE ENVIRONMENTAL SOLUTIONS  
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(215) 997-9000  
FAX: (215) 997-9001  
WWW.PENNEAR.COM

**FIGURE 6**  
EROSION AND SEDIMENTATION CONTROL PLAN  
**HA5177/FORMER STEIERT SITE**

SCALE: 1" = 50'

FIGURE NO. 6  
SHEET NO. 1



LEGEND:

- AREA OF COMPLETED REMEDIATION
- AREA WHERE REMEDIATION WAS NOT NECESSARY
- BERM AREA BOUNDARY

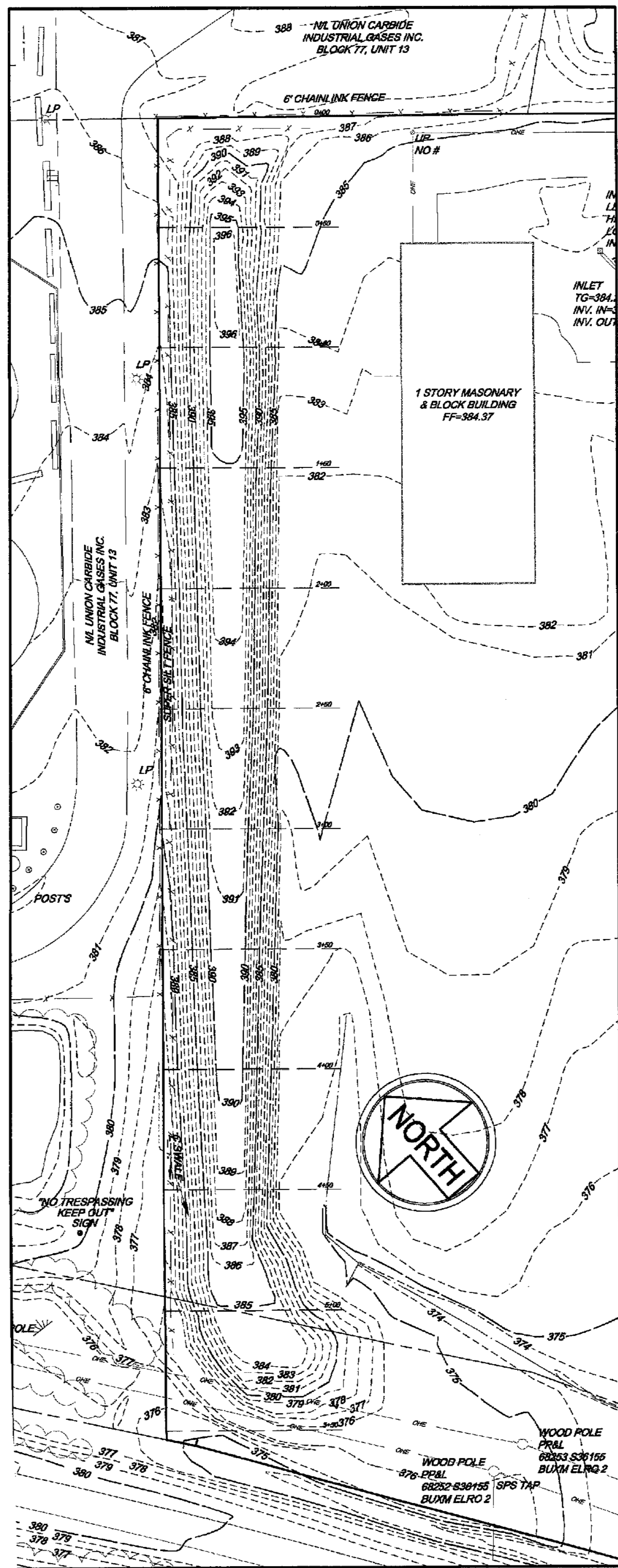
50' 0 50' 100'

SCALE IN FEET

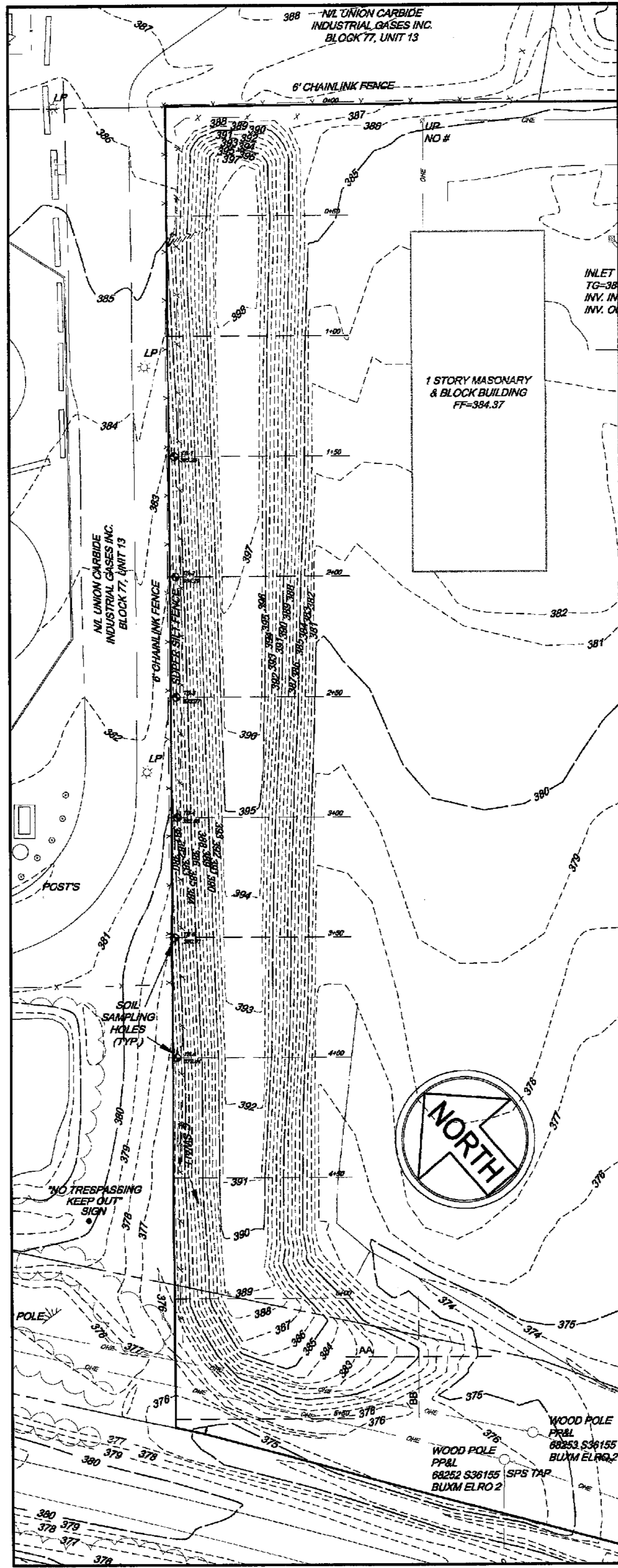
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359 NORTH GATE DRIVE, SUITE 400, WARRENDALE, PA 15086  
(724) 934-3535

FIGURE 7  
SITE MAP SHOWING THE LOCATIONS AND LIMITS OF AREAS REMEDIATED AND THE SOIL BERM  
HA 5177 / FORMER STEIERT SITE  
SCALE: 1" = 50'  
FIGURE NO. 7  
SHEET NO. 7

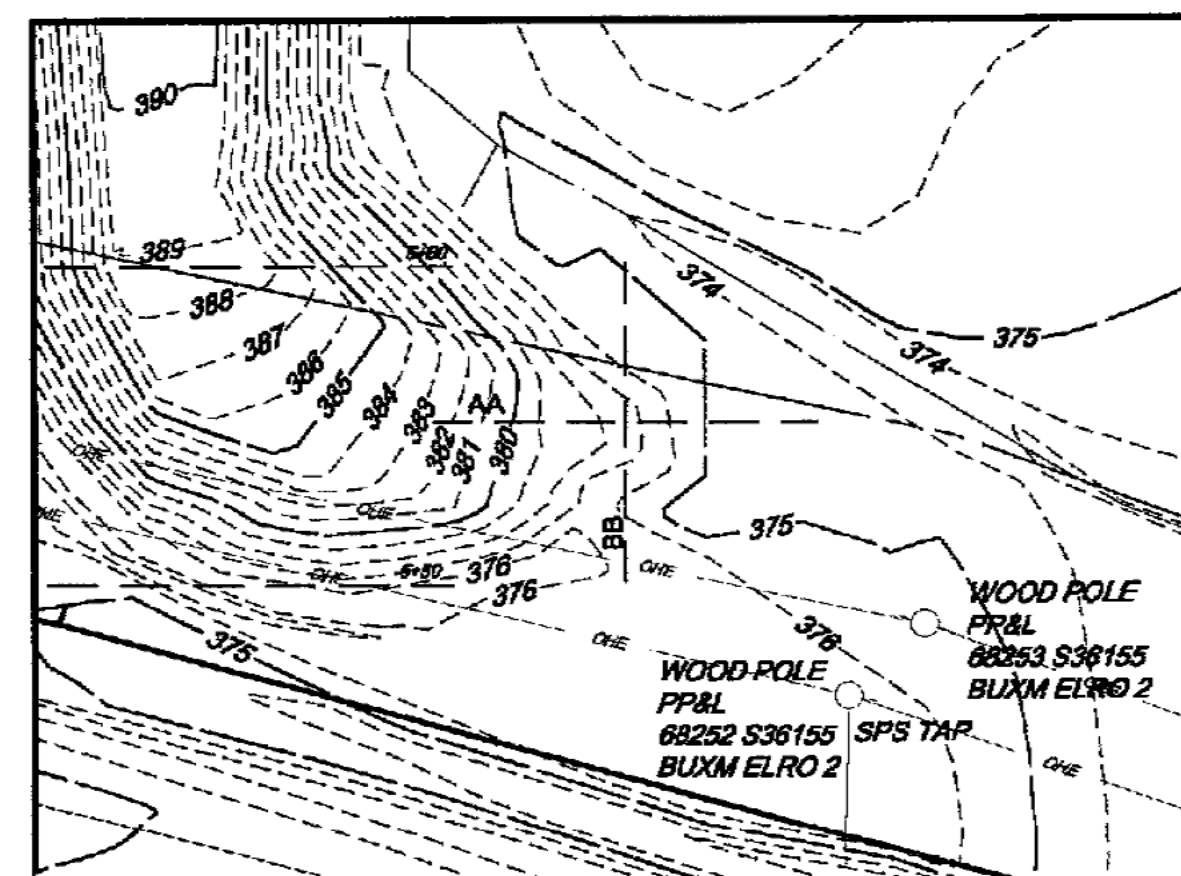
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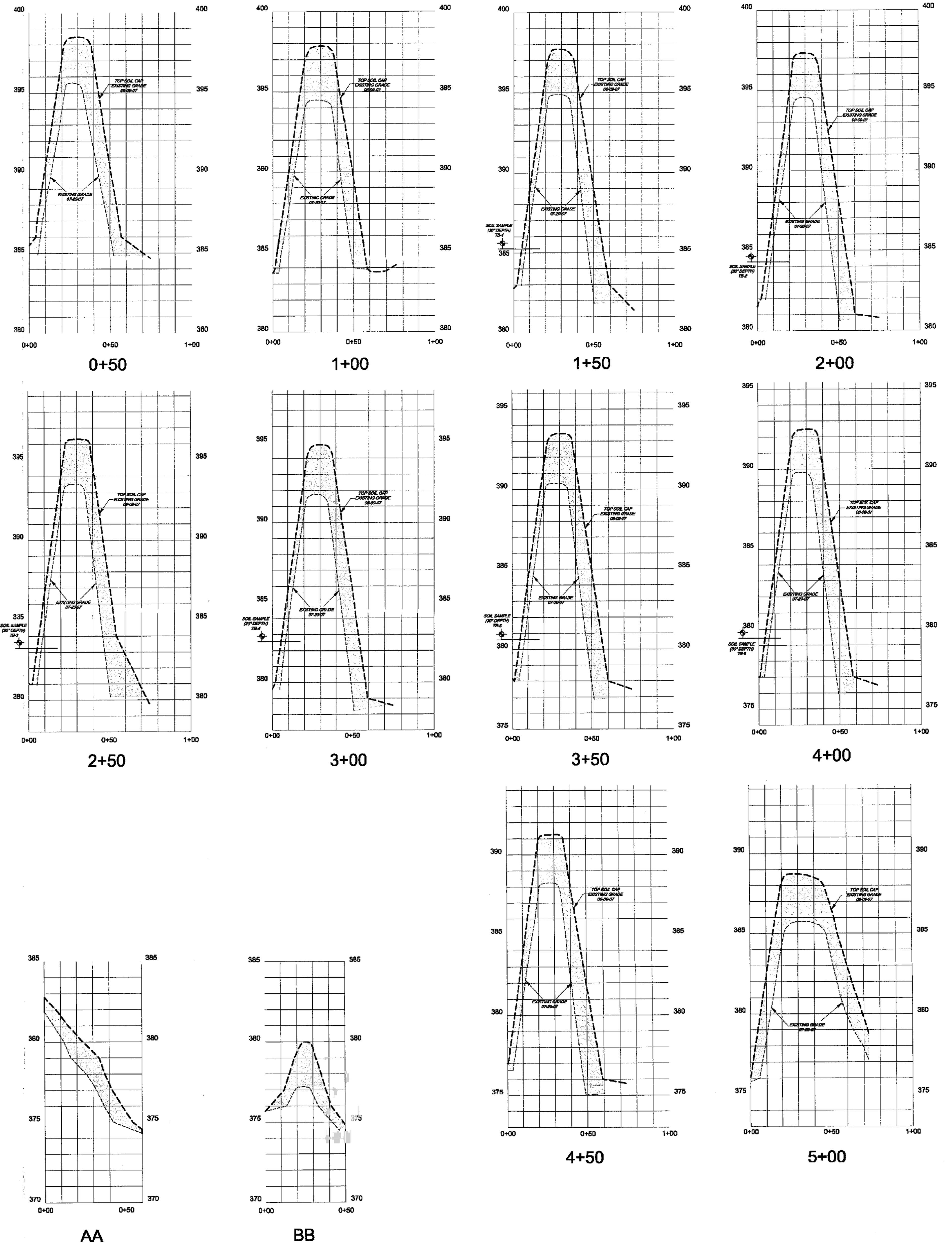
AS-BUILT 07-20-07



FINAL AS-BUILT 09-27-07



AS-BUILT 09-24-07  
(PRE TOP SOIL CAP)

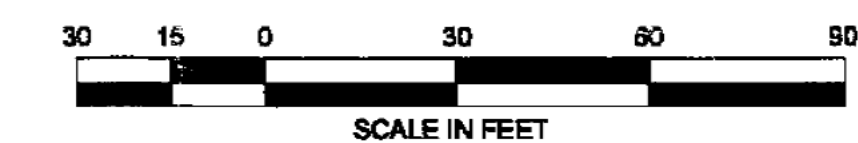


AA

BB

# SOIL SAMPLE TABLE

ANALYTICAL PARAMETERS (1)	TB-1	TB-2	TB-3	TB-4	TB-5	TB-6
LEAD	130	920	96	61	950	83
SAMPLE COLLECTION DEPTHS (3)	2.0-2.5'	2.0-2.5'	2.0-2.5'	2.0-2.5'	2.0-2.5'	2.0-2.5'

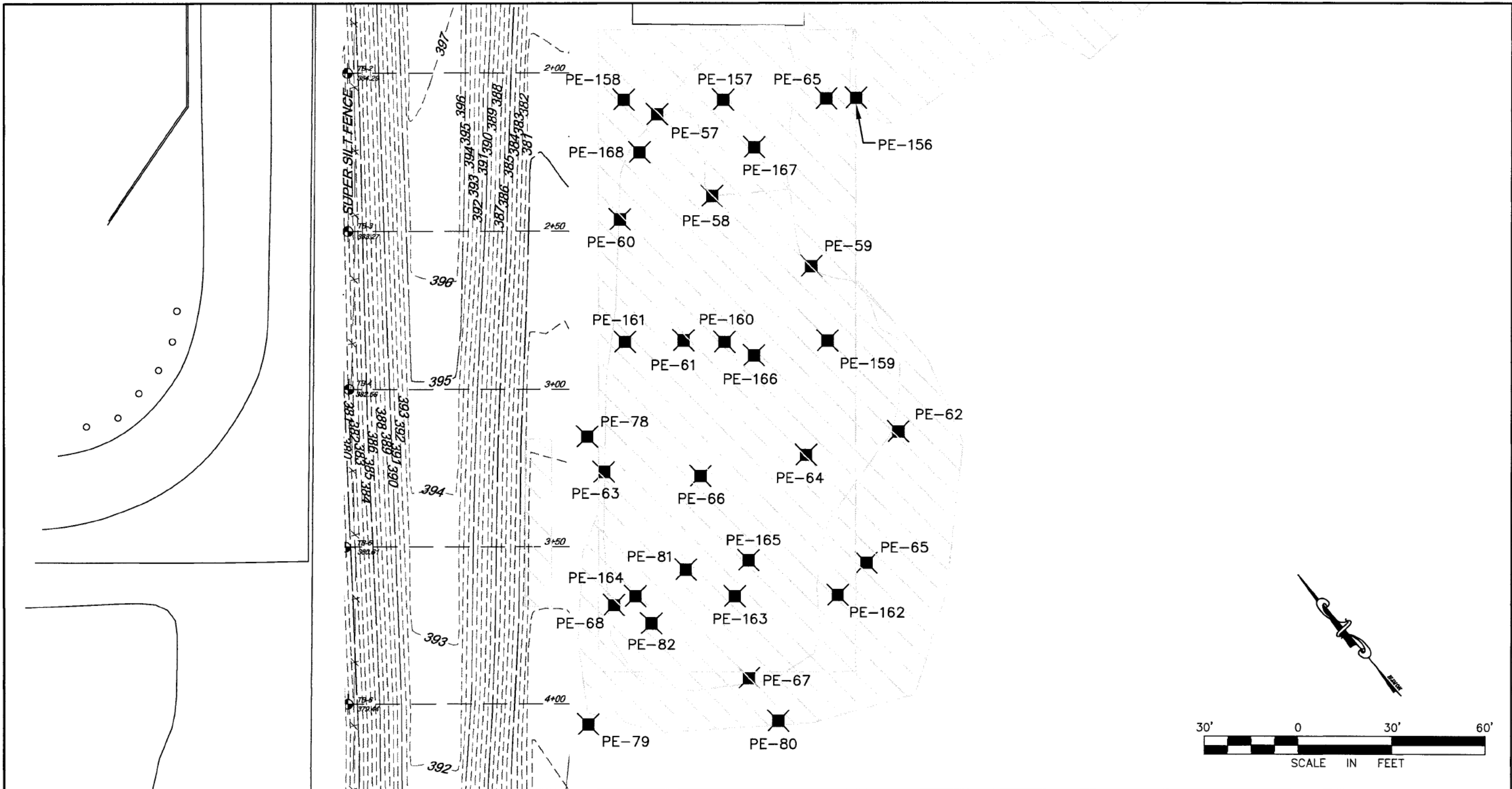


NOTE: BERM AS-BUILT PLAN AND PROFILE PROVIDED BY METZ ENGINEERS 11-06-2007, PREPARED FOR OAKTREE INDUSTRIAL ASSOCIATES, L.P.

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717-533-1800  
1735 BERRY ROAD, HANOVER, PA 17344  
717-533-1800

FIGURE 8  
AS-BUILT SURVEY FOR THE BERM  
HA5177/FORMER STEIERT SITE  
PROJECT/SITE LOCATION  
27-108-2008  
SCALE: H: 1" = 30', V: 1" = 3'  
SHEET NO. 8





**LEGEND:**



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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**HA5177-FG10**  
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DATE  
**2-JAN-2007**

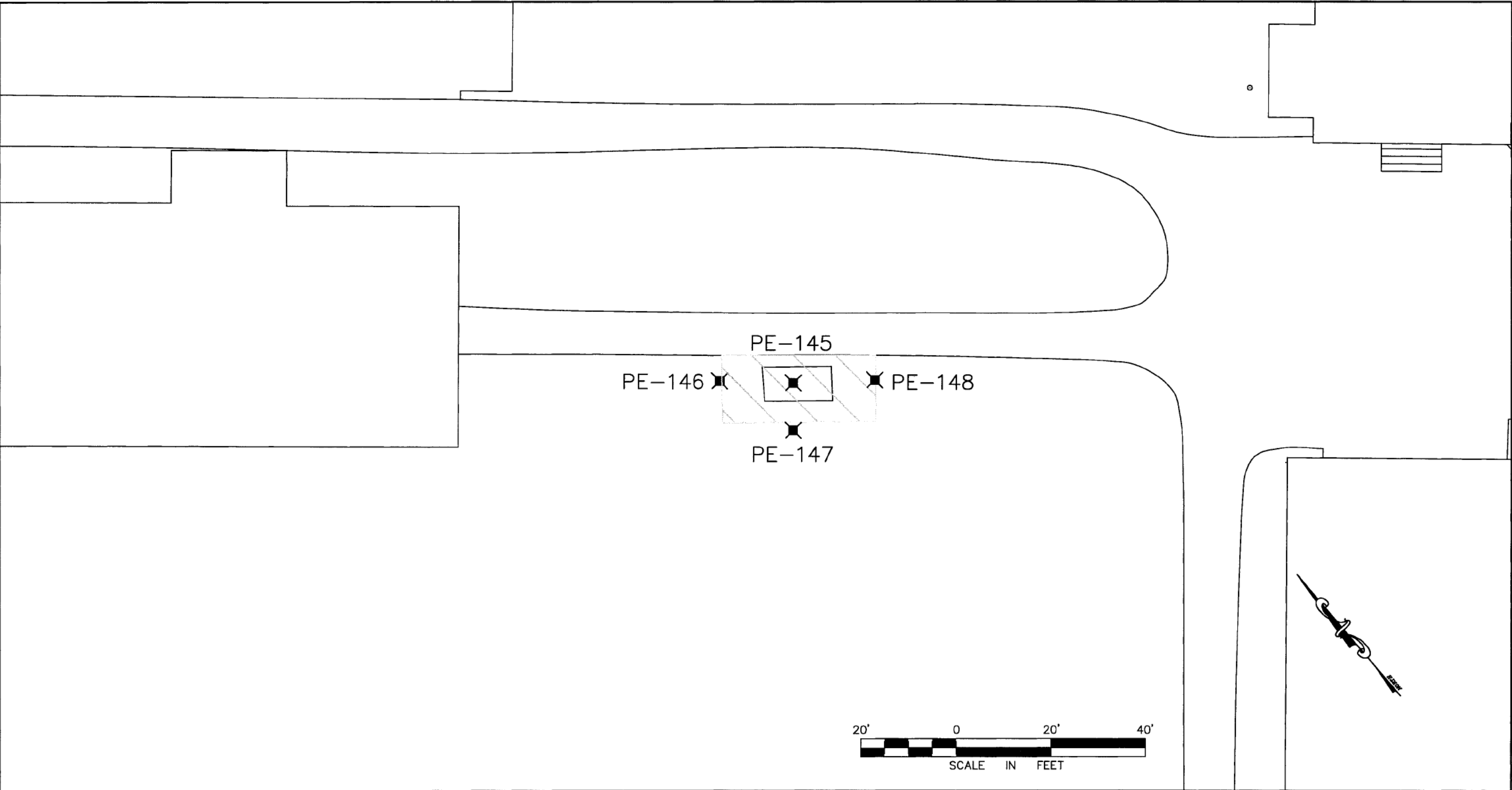
**FIGURE 10**  
**POST-EXCAVATION SAMPLE**  
**LOCATION MAP FOR THE NORTHWEST**  
**AREA C EXCAVATION**  
**HA 5177 / FORMER STEIERT SITE**

GRAPHIC SCALE  
**SCALE: 1" = 30'**

FIGURE NO.  
**10**

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LEGEND:



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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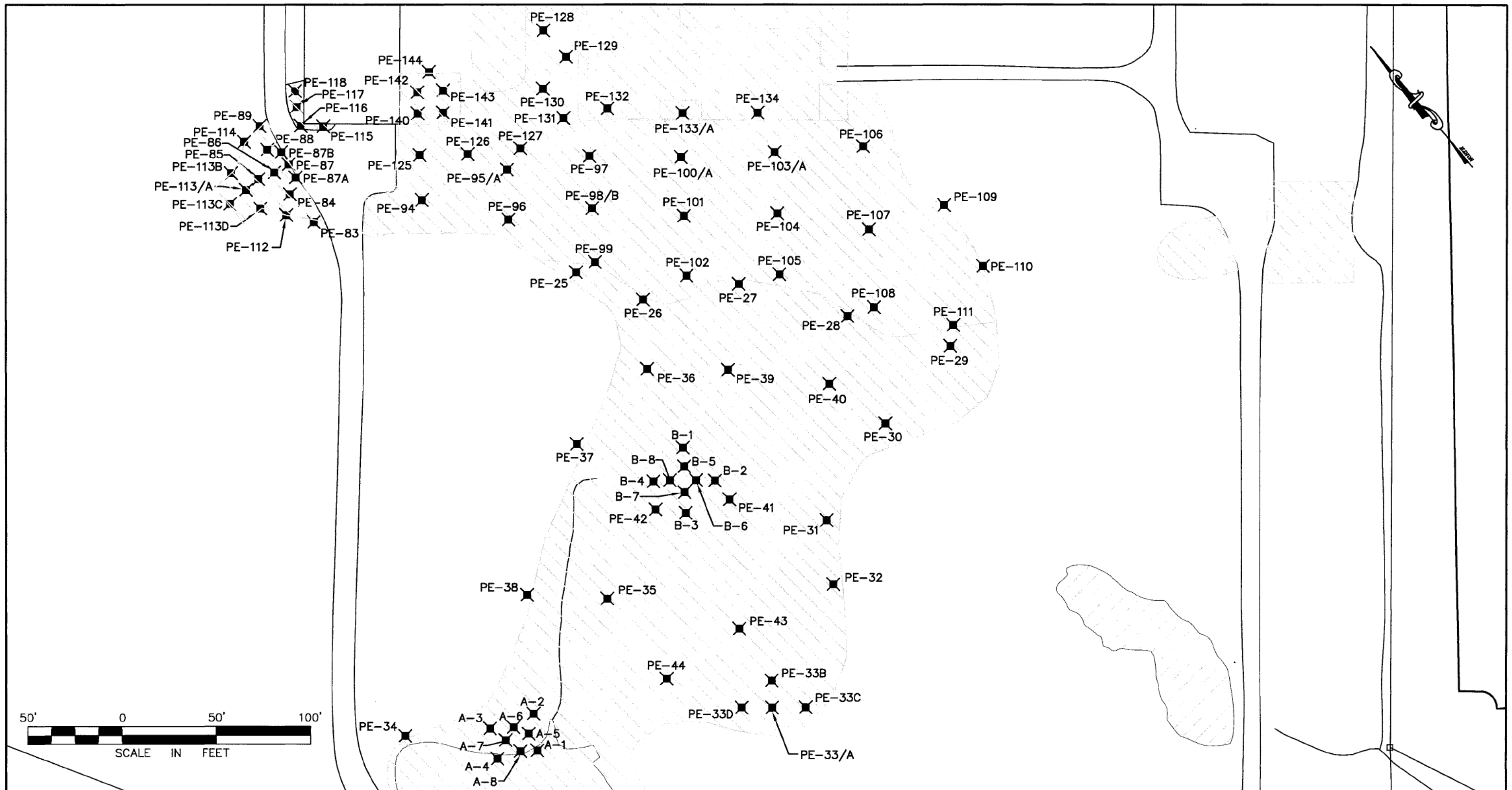
FIGURE 11  
POST-EXCAVATION SAMPLE  
LOCATION MAP FOR THE NORTHCENTRAL  
AREA A EXCAVATION  
**HA 5177 / FORMER STEIERT SITE**

SCALE: 1" = 20'

FIGURE NO.  
11

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# LEGEND:



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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**FIGURE 12**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE EASTERN SWALE**  
**EXCAVATION**  
**HA 5177 / FORMER STEIERT SITE**

GRAPHIC SCALE

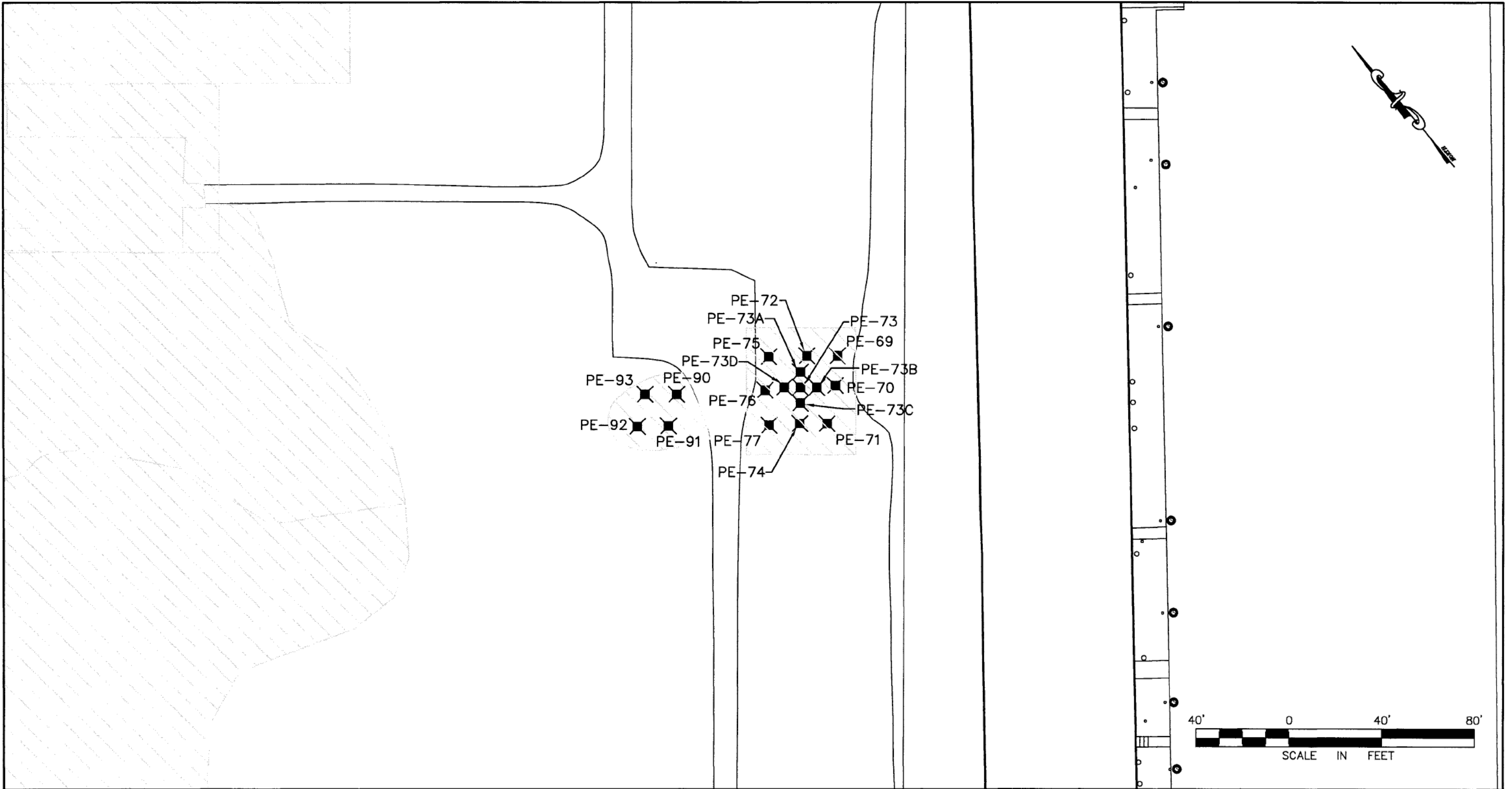
SCALE: 1" = 50'

FIGURE NO.  
**12**




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**LEGEND:**

-  - AREA OF COMPLETED REMEDIATION
-  - AREA WHERE REMEDIATION WAS NOT NECESSARY
-  - SOIL SAMPLE LOCATION



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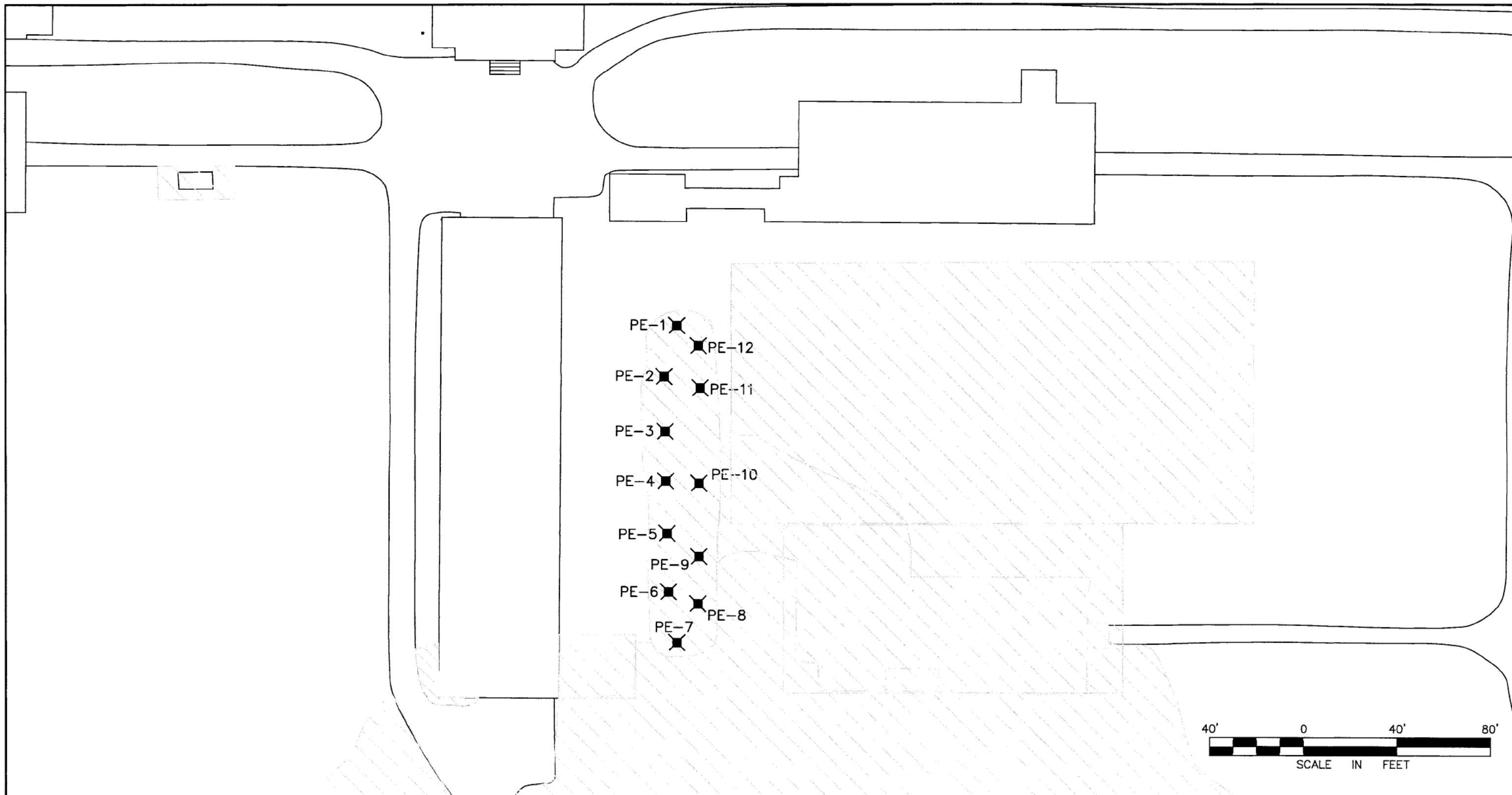
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**FIGURE 13**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE EASTERN AREA A**  
**EXCAVATION**  
**HA 5177 / FORMER STEIERT SITE**

GRAPHIC SCALE <b>SCALE: 1" = 40'</b>	FIGURE NO. <b>13</b>	SHEET NO.: <b>13</b>
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# **LEGEND:**



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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**FIGURE 14**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE POND NO. 1**  
**EXCAVATION**  
**HA 5177 / FORMER STEIERT SITE**

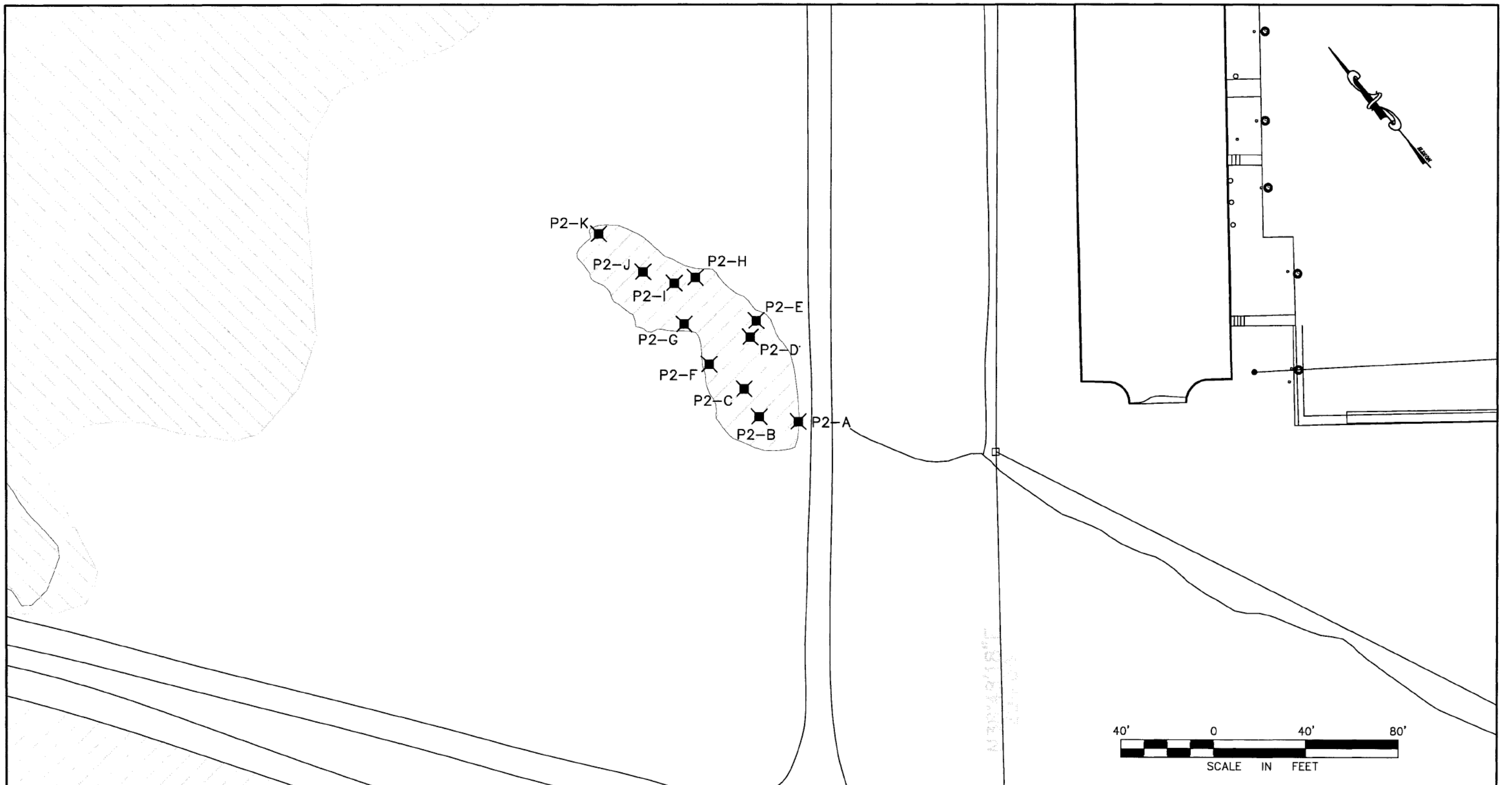
SCALE: 1" = 40'

FIGURE NO.  
**14**

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# LEGEND:



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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**FIGURE 15**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE POND NO. 2 EXCAVATION**

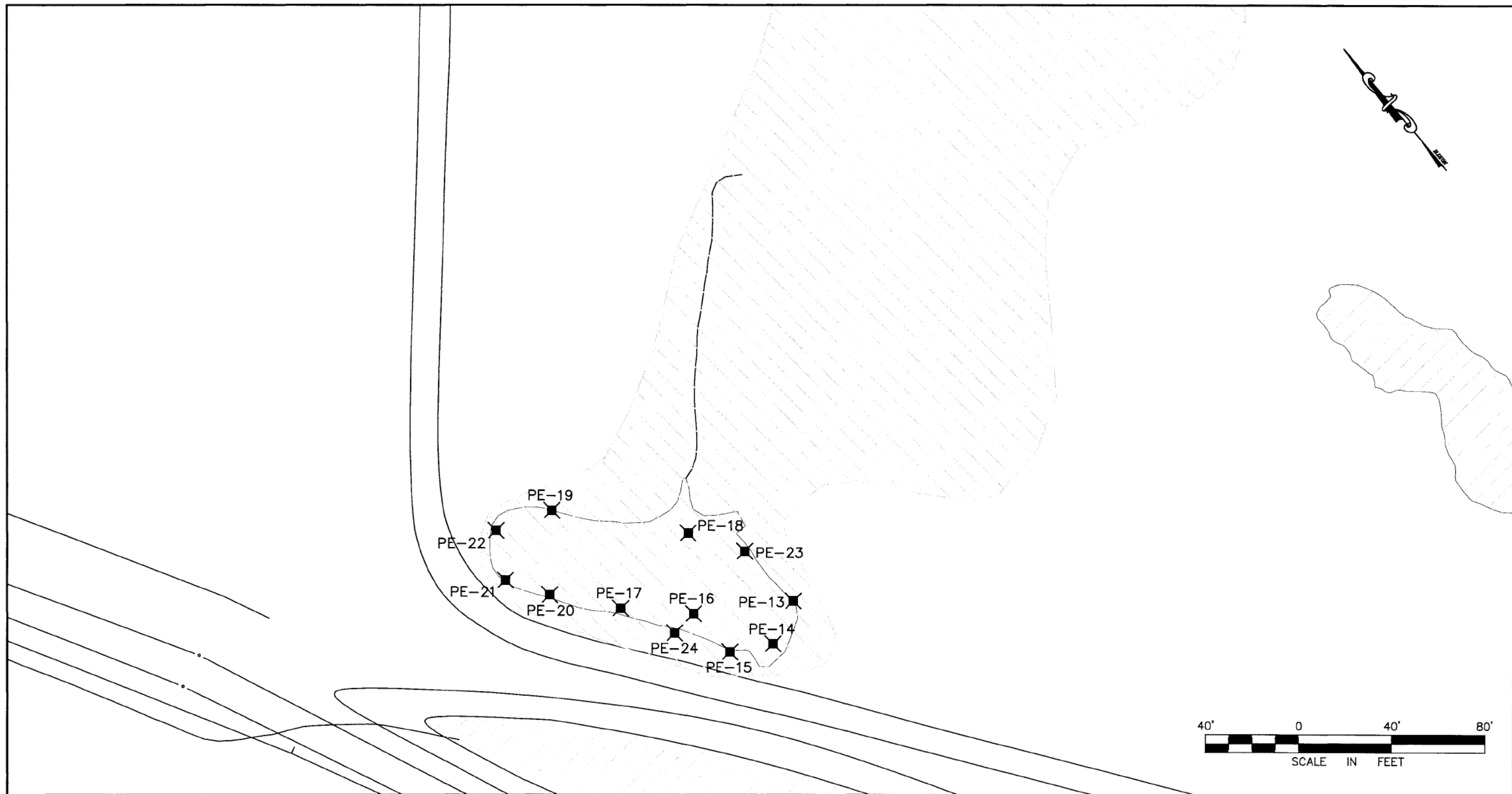
**HA 5177 / FORMER STEIERT SITE**

SCALE: 1" = 40'

FIGURE NO.  
**15**

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**LEGEND:**



— AREA OF COMPLETED REMEDIATION



— AREA WHERE REMEDIATION WAS NOT NECESSARY



— SOIL SAMPLE LOCATION



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**FIGURE 16**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE POND NO. 3**  
**EXCAVATION**  
**HA 5177 / FORMER STEIERT SITE**

GRAPHIC SCALE

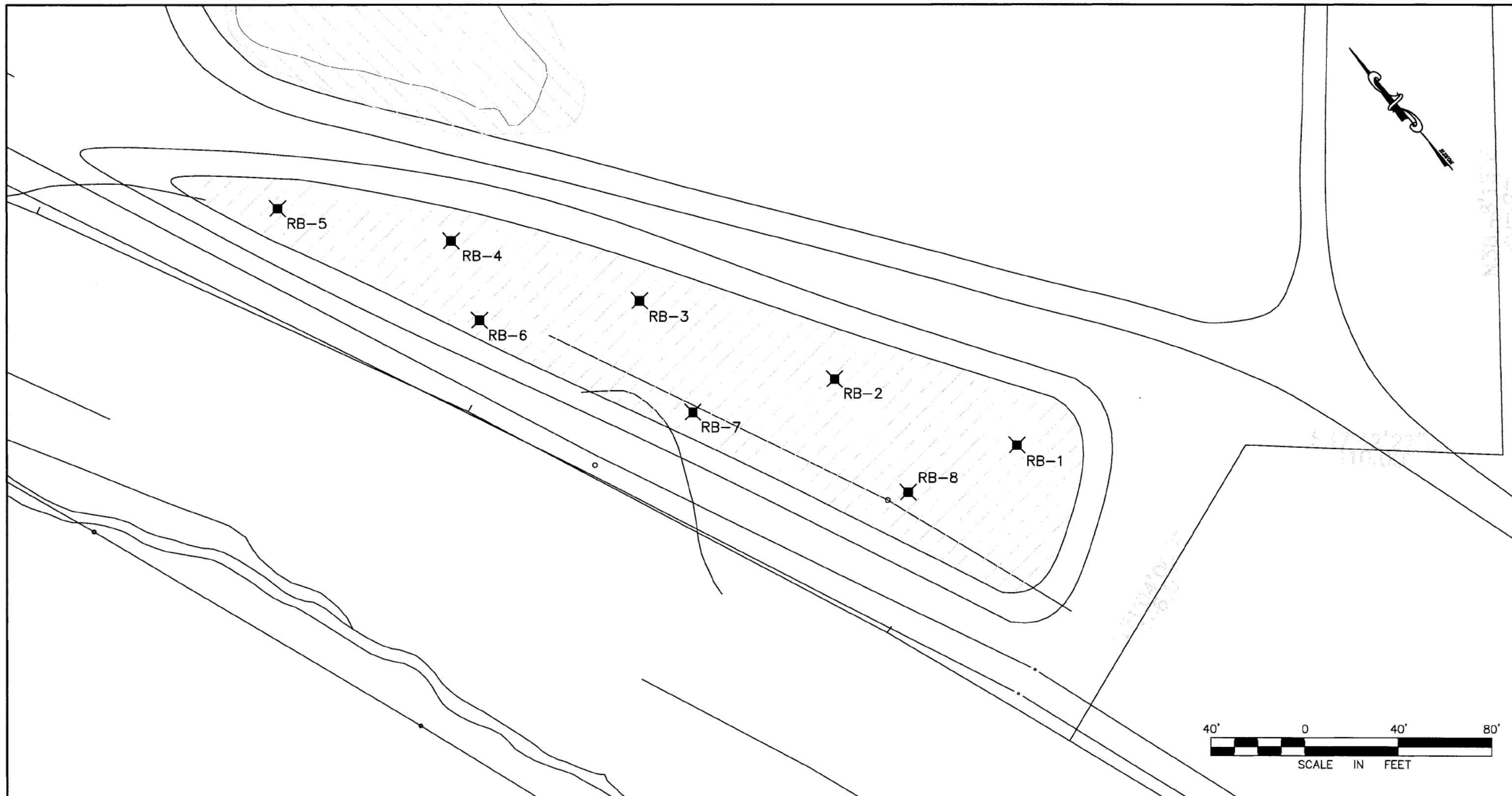
SCALE: 1" = 40'

FIGURE NO.  
**16**




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**LEGEND:**

-  - AREA OF COMPLETED REMEDIATION
-  - AREA WHERE REMEDIATION WAS NOT NECESSARY
-  - SOIL SAMPLE LOCATION



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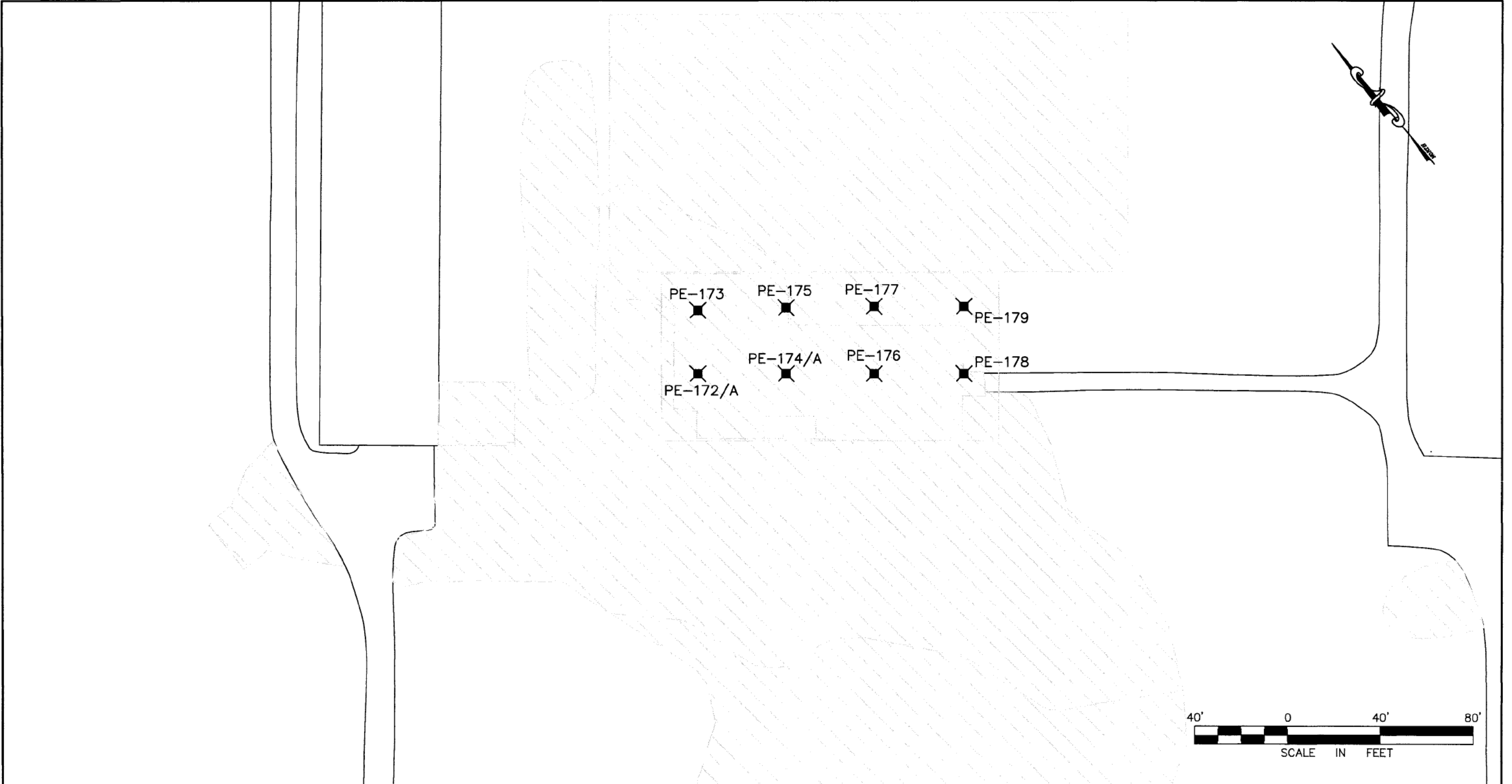
**FIGURE 17**  
**SAMPLE LOCATION MAP FOR THE**  
**DETENTION BASIN**

**HA 5177 / FORMER STEIERT SITE**




GRAPHIC SCALE  
**SCALE: 1" = 40'**

FIGURE NO. <b>17</b>	SHEET NO.: <b>17</b>
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**LEGEND:**

-  - AREA OF COMPLETED REMEDIATION
-  - AREA WHERE REMEDIATION WAS NOT NECESSARY
-  - SOIL SAMPLE LOCATION



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**FIGURE 18**  
**POST-EXCAVATION SAMPLE LOCATION**  
**MAP FOR THE AREA BENEATH THE**  
**CONCRETE MIXING PAD**  
**HA 5177 / FORMER STEIERT SITE**




GRAPHIC SCALE  
**SCALE: 1" = 40'**

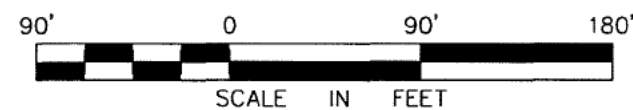
FIGURE NO. <b>18</b>	SHEET NO.: <b>18</b>
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# LEGEND:

-  - AREA OF COMPLETED REMEDIATION
-  - AREA WHERE REMEDIATION WAS NOT NECESSARY
-  - SOIL SAMPLE LOCATION



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HA5177-FIG19  
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(b) (4)  
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## FIGURE 19

SITE MAP SHOWING BERM AND CLEAN  
SOIL CONFIRMATION SAMPLE LOCATIONS

**HA 5177 / FORMER STEIERT SITE**

SCALE: 1" = 90'

FIGURE NO.  
19

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